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## STUDIES ON MORPHINE ADDICTION PROBLEM


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In the last few years there has been a great increase in the interest taken in the general subject of drug addiction not only in the United States but also in practically every other country on the globe. This is easily understandable in those countries where drug addicts are numerous, but among those nations where today addiction is not a serious problem hearty cooperation has also been encountered and may be considered possibly as a measure of self protection. Two or three significant features of this interest in the problem may be mentioned. Of first importance is the Geneva Convention of 1931, under the terms of which fifty-five nations have agreed to limit the manufacture of narcotic drugs to a quantity necessary for medical and scientific purposes and have placed the control of such substances under a committee of the League of Nations. Under the terms of this agreement, each nation notifies the committee each year of its legitimate needs of these drugs for medicinal purposes. The nations make a quarterly report of the stocks on hand and of their consumption of these products. Further, the agreement makes it theoretically, and to a large extent practically, possible to control the manufacture of all drugs capable of producing addiction and to trace them through all legitimate channels to their ultimate destination.

A second matter of great interest in this country has been the decision of the government to establish a federal hospital where persons suffering from addiction may go for treatment. This hospital, which is located at Lexington, Ky., is now under construction and will probably be opened in the early months of 1935.

A further step in the solution of the addiction problem as it is being studied in this country is to be found in the cooperative research that is being carried on under the National Research Council in the Universities of Virginia and Michigan in conjunction with various branches of the government service, especially the Bureau of Narcotics and the Public Health Service. The funds for the research were derived in the first instance from the Bureau of Social Hygiene, this agency being replaced in January 1933 by the Rockefeller Foundation, which organization assumed responsibility for the support of the undertaking for a period of three years. The plan underlying the research as it has been adopted by the committee having direct supervision of the work has been to endeavor to find some drug or drugs that may be used to replace morphine in some of the various ways in which it is used in medicine—drugs that may possess some of its valuable medicinal properties but do not lead to addiction. A somewhat similar plan of work was undertaken for a solution of a like problem in the case of cocaine. This alkaloid, which possesses valuable anesthetic properties, also is highly addicting. A search for a substitute resulted in the finding of procaine, an effective local anesthetic devoid of addicting qualities. It may well be questioned whether the injection of cocaine should not be totally prohibited as it is in Germany, and thus one source of danger of addiction be removed.

The general plan of the present search for a morphine substitute, then, has been to make an accurate study of morphine itself—the chemical constitution in relation to its various actions; the importance of the phenanthrene nucleus, of the side chains attached to the nucleus and of the part each plays in the final picture of the drug's action. The method of attack has been twofold —a breaking down of the morphine molecule and a building up of a compound more or less like morphine, starting with the phenanthrene nucleus as a basis and gradually adding on side chains, the change in activity being observed as each modification is made.

The work on the chemical side of the problem has been carried on in the University of Virginia, where some 190 different compounds have been prepared and sent to Ann Arbor, where they have been studied in the Pharmacological Laboratory, morphine itself being used as a standard of comparison.

The various actions that have been studied aside from the general toxicity of the compounds have been their effects on the general activity of the experimental animals, whether they are depressed or excited; the effects on the respiration and the gastro-intestinal tract; the emetic action, and finally the presence or absence of any analgesic property in the compound. Whether any of the substances possess addicting properties is very difficult to determine on animals, although efforts are being made to study this aspect of the problem on dogs and monkeys. However, the final test will have to be made on the human patient and here the committee has the invaluable assistance of the federal Public Health Service.

An important and interesting aspect of the pharmacologic portion of the work and a subject of fundamental importance has been the comparative study of various


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pairs or groups of compounds that differ from each other in only one respect, usually a substitution or change in one side chain attached to the phenanthrene nucleus. Such a comparison may be made, for instance, in the action of morphine and codeine, in which a hydroxyl group in the former is replaced by a methoxyl group in the latter. The chemists of Virginia have furnished many such pairs of compounds, which have made possible comparative studies leading to the formulation of certain rules as to the action of the outlying groups and their importance in the morphine picture, thus furnishing an interesting contribution to the subject of chemotherapy.

In figure 1 are shown the formulas for morphine and codeine. They are seen to consist of the central phenanthrene nucleus, with an oxygen bridge, a nitrogen containing ring, hydroxyl groups and hydrogen atoms attached. The hydrogen of one of the hydroxyls in morphine being replaced by a methyl group in codeine. Thus in codeine the phenolic hydroxyl of morphine is inactivated or muzzled by the methyl group and a comparative study of these two compounds yields information as to the importance of this group in the morphine effect. As is common medical knowledge, codeine differs from morphine in being less depressant and more convulsant, in possessing less analgesic action and less effect on the respiration and the intestine. The relation of the comparative effects of these two alkaloids holds good also for the other similar compounds in the morphine series. Fifteen pairs of derivatives allied to morphine, each member differing from its sister compound only as codeine differs from morphine, have been prepared and studied and in every case the same rule holds good, so that it would seem reasonable to conclude that the presence of the free phenolic hydroxyl is important for the depressant and analgesic action of morphine as well as for its effect on respiration.

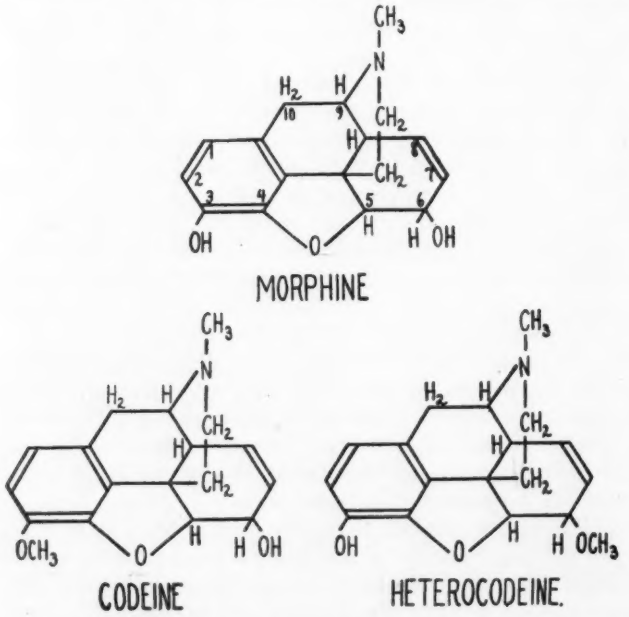



Fig. 1.—Formulas for morphine and codeine. Figures within morphine molecule indicate system of numbering of carbon atoms of the phenanthrene nucleus.

Although it is symmetrically placed in relation to the phenanthrene nucleus, the second hydroxyl of morphine differs from the first in its chemical nature, being alcoholic rather than phenolic, and in the chemical properties of that portion of the molecule to which it is related. The ring to which the alcoholic hydroxyl is attached is aliphatic in character, while the phenolic hydroxyl is connected to an aromatic ring.

The alcoholic hydroxyl also can be muzzled by methylation, by acetylation or by halogen substitution and in this case too there is a uniform change in activity as a result of the chemical change. A study of twelve pairs of such compounds shows an increase in activity, in every case affecting especially the analgesic and respiratory effects. The alcoholic hydroxyl in the 6-position, therefore, appears to be inhibitory to these actions of morphine, because when its activity is suppressed chemically these effects of the molecule are greatly enhanced.

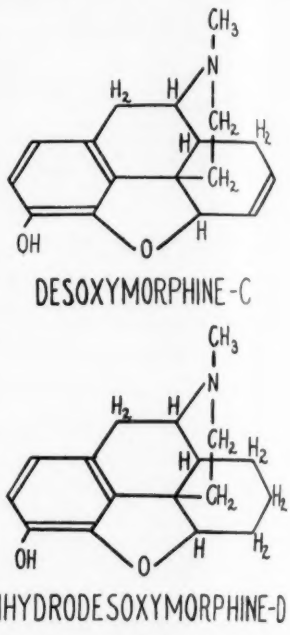



Fig. 2.—The desoxymorphines.

The differences in the hydroxyls chemically and pharmacologically are well illustrated in figure 1 and the table.

In the comparisons shown in the table it will be noted that while methylation of the phenolic hydroxyl has decreased analgesic, respiratory, depressant and intestinal effects and methylation of the alcoholic hydroxyl has increased the same actions above those exhibited by morphine, muzzling either hydroxyl has increased convulsant action and decreased emetic effect. It has been found generally true that any chemical modification of the hydroxyl groups in compounds of the morphine series decreases emetic action, suggesting a causal relationship between free hydroxyls and the production of emesis. This is further emphasized by the increased incidence of vomiting that results if an additional free hydroxyl group is introduced.

*Effective Doses in Milligrams per Kilogram of Alkaloidal Base*

| | Codeine | Morphine | Heterocodeine |
|---|---|---|---|
| Average fatal dose (mice)... | 241 | 531 | 72 |
| Convulsions..... | 150 | 531 | 65 |
| Analgesia..... | 8.0 | 0.75 | 0.56 |
| General depression..... | 16.0 | 4.0 | 0.75 |
| Respiration..... | 1.6 | 0.37 | 0.12 |
| Intestine..... | 16.0 | 4.5 | 2.0 |
| Emesis..... | * | 0.3 | * |

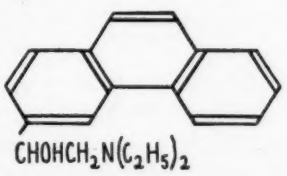
* Both codeine and heterocodeine produced nausea only in amounts well above the analgesic dose, while morphine caused vomiting in less than the analgesic dose.

The importance of the hydroxyl group in the production of certain of the morphine effects is also shown by a study of the change in the action of phenanthrene itself when hydroxyl groups are attached to the nucleus. Phenanthrene is relatively inactive, displaying only a mild hypnotic effect, but when a hydroxyl group is inserted in the 3-position (as in the case of the phenolic hydroxyl in morphine) an increase in depressant effect

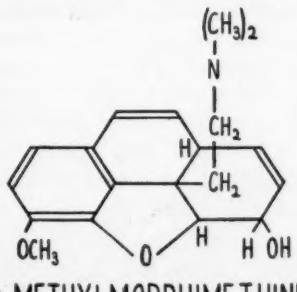
is seen and some degree of analgesic action appears. If a second hydroxyl group is inserted in the phenanthrene nucleus these actions are still further strengthened, especially the analgesic, depressant, emetic and toxic effects.

The rôle of the alcoholic hydroxyl in morphine can be still further elucidated by its total removal and its replacement by hydrogen or oxygen. In the first instance this change results in formation of the type of compounds shown in figure 2, the desoxymorphines. Dihydrodesoxymorphine-D, one of this series, is a very active compound, only about three times as toxic as morphine, but exerting an analgesic action at least ten times greater and a general depressant effect some thirty or forty times as great as morphine. It seems also to be entirely devoid of emetic effect. On account of these properties, which appear to be valuable, this compound is being subjected to clinical trial at the present time. In the second group of changes mentioned, namely, the replacement of the alcoholic hydroxyl by oxygen, compounds of the type of dilaudid and dicodid are produced, both of which have been used in clinical practice.

A second feature of the morphine molecule that is certainly of vital importance is the nitrogen-containing ring. Although the exact position of this ring in the morphine molecule is not known with absolute certainty, any modification of it (for example, the opening of the ring, transforming it into an open chain, fig. 3) results in a great loss of typical morphine effects. In spite of this interesting and important observation, it has been found that the attachment of a somewhat similar nitrogen-containing open chain to the phenanthrene nucleus (fig. 3) results in a compound that exhibits very typical morphine-like effects. Possibly the difference in action between these two types of compounds is to be explained by the difference in the point of attachment of the nitrogen-containing chain, the 3-position seeming to be of vital importance. The importance of this 3-position has been studied in another manner; namely, by the attachment of other groups to phenanthrene in different positions around the nucleus. Hydroxyl groups, acetyl, amino, carboxyl groups, and so on, have been attached to carbon atoms located at different points in the ring and in every instance the activity is greatest when the attachment is made in the 3-position. This very striking development of morphine-like action in such a simple phenanthrene derivative emphasizes again the importance of this aspect of the research work. At the same time there are tremendous difficulties being encountered in the synthesis of these phenanthrene derivatives and constantly new methods of attack have to be developed. However, much progress has been made by Dr. Erich Mosettig and his co-workers, who are devoting their entire time to this phase of the work. It should be finally pointed out, however, that while the phenanthrene nucleus exhibits very interesting activities, especially in the form of the derivatives which have been synthesized, it has never been proved that it is really the essential or necessary portion of the morphine molecule. On that account it has not seemed wise to confine the synthetic work entirely to phenanthrene. It has been extended to include the next most promising substance worthy of study, which appeared to be diphenylene oxide (fig. 4).




DIETHYLAMINOMETHYL-3-PHENANTHRYL CARBINOL.




α-METHYLMORPHIMETHINE

Fig. 3. — Diethylaminomethyl-3-phenanthryl carbinol and alpha-methylmorphimethine.

A series of compounds is being synthesized with this grouping as a base. The parent substance is seen to consist of two phenyl groups connected through adjacent carbon atoms and possessing an oxygen bridge as in morphine. Diphenylene oxide exhibits an activity somewhat comparable to phenanthrene, but its derivatives are in some respects more active. In the building up of the diphenylene oxide derivatives, many of the same groups have been added as in the phenanthrene series, permitting direct comparisons of pairs of substances having on the one hand a phenanthrene nucleus and on the other a diphenylene oxide base. When such comparisons are made, the latter are more toxic but often possess the greater analgesic action. None of them have exhibited typical morphine-like action.

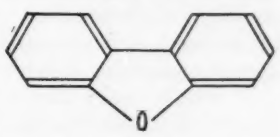



Fig. 4.—Diphenylene oxide.

From this brief survey of the work, it will be seen that notable progress has been made in the correlation of chemical structure to physiologic activity as applied to the morphine series and in the development of morphine-like effects in comparatively simple derivatives of phenanthrene. This progress has been possible only through the cooperation of many agencies—the Rockefeller Foundation, which is furnishing the necessary funds; the Universities of Michigan and Virginia, which are contributing the laboratory facilities; the Bureau of Narcotics and the Public Health Service, which has undertaken the clinical aspects of the problem, and finally the laboratory personnel, whose enthusiastic and indefatigable efforts are pressing toward a solution of the problem.

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**Case Records and Self Education.**—I have a very definite impression that the average interne quite fails to grasp the full significance of case records. He may realize that from a medical point of view they are important as a basis for the study of unusual cases, new procedures, or particular diseases. . . . What he seldom realizes, in my experience, is that they offer one means, and an important means, of self-education. It is, after all, a rather difficult matter to put on paper an adequate and satisfactory history. It is an art in itself, and it is only acquired by experience and practice,—not merely practice in history taking itself, of course, but experience in the physiognomy of disease and in the natural history of the commoner maladies. I have the feeling that in many of our hospitals the interne's attitude of indifference to case records is fostered by the shortcomings of the visiting staff. It is certainly unusual in many hospitals to find in the average case record careful notes dictated by the visiting physicians or surgeon. They, too, do not always realize that the habit of putting down one's observations in writing not only increases descriptive powers but develops capacity for observation and clarifies one's conception of a given case.—Blumer, George: Some Discursive Remarks on Bedside Diagnosis, *Yale J. Biol. & Med.* **6**:571 (July) 1934.

# THE ADDICTION LIABILITY OF CODEINE

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Discussions have arisen from time to time concerning the addiction liability of codeine and its value as a therapeutic agent for the relief of those withdrawal phenomena seen when morphine is abruptly withheld from persons addicted to its use. Although generally conceded to be nonaddicting, various authors, notably Sollier,[1] Petty,[2] Lambert,[3] White,[4] Rouges de Fursac and Monestier,[5] Terry[6] and Sollmann,[7] have indicated that codeine possesses this propensity. It was therefore considered advisable to investigate the addiction liability of codeine before employing it in the treatment of abrupt morphine deprivation. The studies with which this article deals, however, attempt to record certain preliminary observations necessary for carrying out a cooperative investigation sponsored by the Committee on Drug Addiction of the Medical Science Division of the National Research Council.

The Committee on Drug Addiction of that council, supported by funds from the Rockefeller Foundation, in connection with its studies of alkaloidal chemistry at the University of Virginia and its pharmacobiologic investigations at the University of Michigan, has endeavored to produce new substances from opium, the addiction liabilities of which are unknown quantities in the human body. The Public Health Service, because of its access to clinical material and its studies of drug addiction incident to the establishment of the U. S. Narcotic Farms, was requested by that committee to determine the addiction liabilities of these new substances when administered to persons afflicted with chronic opium poisoning. Before such studies were undertaken, however, it seemed desirable to develop a technic and method for using these drugs by first-hand observations with morphine and codeine. The two drugs, one of which has pronounced addictive properties and the other questionable potentialities, were prepared by Dr. Lyndon F. Small of the University of Virginia, thus insuring the experimental substances used of being uniform in purity and in chemical composition. This article deals, therefore, with the results of balancing the addiction liability of morphine against that of codeine and is preliminary to further studies dealing with newer substances.

There are two methods pertinent to the study under consideration:

1. Attempt to produce addiction through regular administration of the preparation to be studied over a long period of time.
2. Attempt, through substitution, to maintain a previously established habit by administration of the substance in question.

Employment of the first method would be expensive and time consuming, and it has no particular advantage over the second method. The rationale for this procedure is found in the following hypothesis: Given valid addiction to morphine, a definite syndrome of abstinence phenomena will set in shortly after its abrupt and complete withdrawal. Hence a substance that can be completely substituted for morphine without permitting the appearance of that syndrome may be addicting in itself even though it is an adequate substitute. If stability can be maintained by the substituted product over a period sufficiently long to rule out abstinence resulting from withdrawal of the morphine, and then can be withdrawn without permitting the appearance of that syndrome, it is probably an adequate nonaddicting substitute for morphine; but if abstinence phenomena do set in, that substance is addicting. A substance that cannot be substituted has nothing to offer.

## METHODS

Seven white adult males in whom valid addiction to morphine was present on admission were physically and psychically stabilized on four daily hypodermic injections of morphine sulphate over a period of from ten to thirty days. The doses were adjusted to satisfy their respective requirements. Then over a period of three days effective doses of codeine acid tartrate were substituted, one at a time, for each dose of morphine, so that after the third day no further morphine was administered. It was attempted to adjust the doses of codeine so that the subjects would be unaware of the substitution. Stability was maintained by codeine for the subsequent eight to fourteen days and then it was abruptly and completely withdrawn.

*Signs Pertinent to Abstinence*

| | |
|---|---|
| Mild | 1. Yawning<br>2. Lacrimation<br>3. Rhinorrhea<br>4. Perspiration |
| Moderate | 5. Muscle tremor<br>6. Dilated pupils<br>7. Goose-flesh<br>8. Anorexia |
| Marked | 9. Air hunger<br>10. Restlessness<br>11. Insomnia<br>12. Elevated blood pressure |
| Severe | 13. Emesis<br>14. Diarrhea<br>15. Weight loss |

Complete and satisfactory isolation from the remainder of the population was maintained throughout the entire period of observation. That absolute uniformity and control of all conditions and temporal relationships might be assured throughout the entire period of study, observation and supervision were maintained twenty-four hours daily.

The subjects were weighed each morning before breakfast and then blood pressure determinations were made after five minutes of rest in bed. Observations for specific signs of abstinence were made and recorded three times daily. These observations included the presence and degree of the signs listed in the accompanying tabulation, which are pertinent to the abstinence syndrome. The method used in evaluating the degree of abstinence is indicated as mild, moderate, marked and severe.

## RESULTS

The case results were quite uniform throughout; but, since the data are too comprehensive to be presented in

Read before the Section on Pharmacology and Therapeutics at the Eighty-Fifth Annual Session of the American Medical Association, Cleveland, June 15, 1934.

1. Sollier, P.: Presse méd. **89**: 716, 1905; Rev. de méd. lég. **20**: 359, 1913.
2. Petty, G. E.: Narcotic Drug Diseases and Allied Ailments, 1913.
3. Lambert, Alexander, in Osler and McCrae: Modern Medicine, 1914; M. Rec. **87**: 253, 1915.
4. White, W. A.: Outlines of Psychiatry, Washington, D. C., Nervous and Mental Disease Publishing Company, 1918.
5. Rouges de Fursac and Monestier: Ann. de méd. lég. **4**: 119, 1924.
6. Terry, C. E.: The Opium Problem, p. 320, 1928.
7. Sollmann, Torald: A Manual of Pharmacology, Philadelphia and London, W. B. Saunders Company **4**: 310, 1933.

detail, the results are given in terms of the degree of abstinence exhibited by the group during the periods of morphine stabilization, transition to codeine, stabilization on codeine, and after abrupt and complete withdrawal of codeine.

Stabilization on morphine was effectively maintained by the administration of four daily injections. The individual requirements ranged from 50 to 150 mg. of morphine sulphate four times daily. None exhibited abstinence after satisfactory adjustment of the individual doses.

During the period of transition to codeine all exhibited mild evidence of abstinence at some time, and three of the subjects became moderately abstinent before the doses of codeine were raised to an adequate size. Because of the low solubility (4 per cent) and the necessarily high doses (240 to 600 mg.) of codeine, it was necessary for the volume constants to be readjusted at this time.

During the eight to fourteen day period of stabilization on codeine, five of the subjects exhibited mild abstinence at some time and two were completely stable throughout. All were thoroughly stable for the majority of this period.

After abrupt and complete withdrawal of codeine, mild evidence of abstinence appeared during the first thirty hours and then suddenly became severe in all cases and continued in its severity until the fourth or fifth day, when recovery set in. The subjects were fit for discharge by the fourteenth day after withdrawal. This picture differs from that of abrupt morphine deprivation only in regard to the delayed onset of severe abstinence manifestations.

All the subjects were aware of the substitution but voiced no objections to it and asked for the substituted product during the acute severity of abstinence. Often the first two injections were followed by localized or generalized flushing and itching, at which time no pulse, respiratory or blood pressure changes were found and no dermographism could be elicited. Otherwise no evidence of toxicity or intolerance was found even though as much as 2.4 Gm. was administered in twenty-four hours. The ratio of daily effective substitution doses of codeine for morphine ranged from 3.8:1 to 8:1; the median ratio was 5:1.

## SUMMARY

The habits of seven men thoroughly addicted to morphine were completely and satisfactorily maintained over a period of eight to fourteen days by adequate doses of codeine. The abstinence syndrome that set in subsequent to abrupt and complete withdrawal of the codeine did not differ remarkably from that seen after abrupt morphine deprivation. The median substitution dose of codeine was five times that of morphine.

## COMMENT

It is felt that the material presented should be interpreted with due regard to the practical aspects that prevent codeine addiction from becoming prevalent. Codeine is relatively much more expensive than morphine, for narcotic doses are larger. It is inconvenient to administer, because its low solubility and high dosage require large volumes. Codeine is not readily available to the purveyors of illegitimate narcotics.

## CONCLUSION

Codeine possesses definite addiction liability.

# THE USE OF DILAUDID IN THE PAIN OF CANCER

C. MALONE STROUD, M.D.
ST. LOUIS

The introduction of dilaudid (dihydromorphinone hydrochloride) into this country was attended by much and, in certain instances, most undesirable publicity. Some of the early beliefs concerning its safety have been discredited. As a result, there has been a tendency among certain groups to minimize its usefulness and a failure to use it in many cases in which it would have been of benefit to patients in constant pain. Through the courtesy of the manufacturers [1] I was able to obtain a considerable supply as early as June 1932 and have used it both preoperatively and postoperatively as I had used morphine and codeine. My experience has been chiefly with patients suffering from malignant disease at the Barnard Free Skin and Cancer Hospital.

Pain is an almost inevitable complication of cancer that has progressed beyond the stage of curability. Nearly every medicament known to possess analgesic properties has been used in attempts at its control. It is unnecessary to emphasize the need of an adequate substance for the purpose of giving relief to the many people who suffer with cancer and who are constantly reminded of their approaching doom by an ever present distress.

*Types of Malignant Tumors*

| | |
|---|---|
| Carcinoma of antrum | 3 |
| Carcinoma of tongue and buccal mucous membrane | 5 |
| Carcinoma of the stomach and bowel | 8 |
| Carcinoma of cervix | 46 |
| Carcinoma of the female breast | 45 |
| Sarcoma of the testicle with metastases | 1 |
| Sarcoma of bone | 2 |
| Carcinoma of the rectum | 2 |
| Carcinoma of male breast | 2 |

An adequate remedy must, first of all, give relief from pain; secondly, it should produce little or no undesirable effects on the patient. Thus far, no drug has been found to supplant opium or some of its derivatives in the control of severe constant pain. Most of the derivatives of opium possess properties that are undesirable, especially if continued use is necessary. Habit formation, undesirable interference with normal gastro-intestinal function, and depression of the central nervous system may be especially mentioned.

The questions that therefore arose when I began the use of dilaudid were:

1. Is dilaudid a satisfactory anodyne for patients with the pain of cancer?
2. Is it less habit forming than morphine and is tolerance more rapidly established?
3. Does it possess the disagreeable side actions of morphine and to the same degree when given in equivalent doses?

In a series of 114 patients suffering with constant pain, the types of malignant tumor were distributed as shown in the table.

From the Barnard Free Skin and Cancer Hospital and the Department of Internal Medicine, Washington University School of Medicine.

Read before the Section on Pharmacology and Therapeutics at the Eighty-Fifth Annual Session of the American Medical Association, Cleveland, June 15, 1934.

1. The Bilhuber-Knoll Corporation. A preliminary report of the Council on Pharmacy and Chemistry appeared in THE JOURNAL, April 1, 1933, and dilaudid was subsequently accepted for admission to New and Nonofficial Remedies.

Although it was not possible to follow all cases uninterruptedly, the special cases selected for detailed report have been observed carefully to their termination and the patients have possessed sufficient intelligence to cooperate in their management.

### EFFECTIVENESS OF DILAUDID AS AN ANALGESIC

In every instance in which dilaudid was used, it proved itself an effective anodyne. This is in accord with the observations of many German and a few American clinicians. In the present series it was poorly tolerated in but four cases.

It should be emphasized that continuous relief is desired and not merely the control of the peaks of intense suffering. Most of these patients were seen only after the beginning of constant pain. In order to obtain continuous effect, the method of administration is important. Dilaudid is rather rapidly absorbed and quickly effective if given either by mouth or by hypodermic injection. Absorption is delayed when it is given by rectal suppository and, consequently, the action is more sustained. This is of distinct advantage in the administration of the bedtime dose. Best effects were obtained by the administration of varying amounts about every three hours. It was noted that a single dose given by hypodermic injection or by mouth, except in very severe pain, would give relief for three and one-half hours. The amount given, as well as the time interval, varied, as the tolerance increased and as the pain became more severe. At bedtime the dose was usually doubled and given by suppository. Although dilaudid possessed no hypnotic properties, except in very large doses, patients would usually sleep well for a few nights after it was first administered. After they became accustomed to a degree of relief, it was frequently necessary to administer a sedative or hypnotic, which was usually given at bedtime. In one case, satisfactory hypnosis was difficult to obtain and morphine was resorted to with the desired results.

The analgesic value of dilaudid is well illustrated by the case of E. M., a man, aged 65, who entered the hospital, Nov. 2, 1932. He had a cancer of the right maxillary antrum. He had been treated by cautery and radium. There was considerable destruction of cartilage and the wall of the antrum, as well as a complete destruction of the right eye by a pyogenic infection. His pain was very marked. There had been only partial relief of the pain with morphine, to which he was becoming addicted. In this case, the use of dilaudid was begun on November 3. He was given 1/20 grain (0.003 Gm.) hypodermically every three hours with more relief than he had previously obtained by 1/4 grain (0.016 Gm.) of morphine. Occasionally, this dosage was augmented at night by a suppository containing 1/12 grain (0.005 Gm.) of dilaudid and sometimes it was necessary to give a barbiturate as a hypnotic. The patient gradually became weaker and died, Jan. 9, 1933. Presumably unconsciousness, which came on January 8, was caused by an extension of the tumor and infectious process to the brain.

In the case of H. B., a woman, aged 34, a troublesome cough, as well as a marked constant pain of terminal carcinoma, was controlled. She was admitted to the clinic, June 24, 1932. There was a history of productive cough, uterine bleeding and a considerable loss of weight. She was found to have a cancer of the cervix, syphilis and pulmonary tuberculosis. She was given roentgen therapy, which resulted in a cessation of the menorrhagia. On account of the increase in cough and lower abdominal pain, dilaudid was started, Sept. 6, 1932. She was given a dosage of 1/48 grain (0.001 Gm.) every three hours and felt much better, with relief of the cough and pain. She had a total of 4,950 milligram hours of radium, the last treatment being given October 9. She died, October 28.

The value of dilaudid as a cough remedy in cases of proved lung metastases has been noted many times.

This property of the drug played an important part in the comfort of G. G., a man, aged 53, who was first admitted to the clinic, Feb. 18, 1931. A diagnosis of osteogenic sarcoma of the left leg was made and the patient was advised to have his leg amputated but refused. He was treated by the use of high voltage roentgen therapy, with some relief of the pain and a diminution in the size of the tumor mass. In January 1932 he came back to the hospital, complaining of pain and increase in the size of the tumor. At that time, amputation of his left leg was done, after it was noted that there were no obvious metastases.

In April 1933 he appeared in the clinic, complaining of a troublesome cough, productive of a blood streaked sputum, with considerable pain in his chest. He was started May 5, 1933, on dilaudid, 1/48 grain (0.001 Gm.) by mouth every three hours. He gradually grew weaker but suffered no pain and very little cough. Edema of his leg appeared and he was digitalized and placed on iron, by mouth. He was last seen in our clinic, Sept. 26, 1933. He died, Oct. 9, 1933.

In this case, relief of constant pain definitely prolonged useful activity. Dilaudid when given by mouth was usually given in aromatic elixir.

### HABIT FORMATION AND TOLERANCE

It has been stated that dilaudid is less habit forming than morphine. Eddy's report [2] cited several references in the German literature of cases of addiction. Since it is desirable, even in cancer work, to use a non-habit forming drug, we were interested in observing this property. Euphoria was noted only once with a dose as small as 1/32 grain (0.002 Gm.) and very rarely with larger doses. Several patients were able to take dilaudid for twelve weeks or more, and when they no longer needed it gave it up without craving. It is apropos to relate the history of a patient with cancer, who, because of treatment, was able to omit dilaudid without symptoms of craving for three months:

H. F., a white man, aged 48, entered the clinic, Oct. 5, 1932, complaining of painful swelling of the neck. Following the opening of an abscess some ten months before, a small round mass had appeared. In about four months, lymph nodes of the neck began to enlarge, followed shortly by blindness of the left eye. Biopsy of one of the enlarged cervical nodes revealed cancer. He entered the hospital, Nov. 9, 1932, complaining of severe pain. He also had a large tumor mass, almost filling the nasopharynx. For the next five weeks his pain was controlled by the administration of 1/32 grain (0.002 Gm.) of dilaudid by mouth every three hours. At the end of this period his pain had been sufficiently relieved by x-rays so that medication for its control was no longer necessary. The drug was stopped and was not given for three months. In March it was necessary to resume dilaudid, as roentgen therapy no longer relieved the pressure from the tumor mass sufficiently to control the pain. Dilaudid in this case controlled the pain quite well but the patient lived beyond our expectations and it was necessary to increase the dosage to a marked degree. At one time before his death there was a period of a few days when he received 1 grain (0.065 Gm.) of dilaudid orally every three hours. Constipation, which had been pronounced before beginning dilaudid, was not materially increased.

While few of our patients were ever taken off dilaudid after it was once begun, there were many cases in which the symptoms of craving were not notable.

In several cases, dilaudid was given after morphine had been used for varying periods of time. In every case the substitution was welcomed except in two cases

2. Eddy, Nathan B.: Dilaudid (Dihydromorphinone Hydrochloride), J. A. M. A. **100**: 1032 (April 1) 1933.

in which there had been a history of morphine addiction before the onset of malignancy. One of these patients was a physician who was suffering from carcinoma of the antrum and who had been treated with large amounts of morphine. He was given dilaudid in doses approximately equivalent to the amount of morphine that he had been taking. A ten day trial of dilaudid failed to give him the subjective relief previously afforded by morphine, and his craving for morphine was not satisfied by dilaudid. Psychic disturbances prevented accurate observation of the analgesic property of the drug in this case.

Through the courtesy of Dr. Julius Jensen, I was permitted to see a patient who, after a relatively short use of dilaudid, had developed a decided craving for the drug. He would become nervous and fidgety and would cry unless either morphine or dilaudid was administered promptly at the expected interval. Another patient, an elderly woman with marked arthritis and symptoms of senile dementia, developed a profound liking for the drug after three weeks' use.

While it was difficult to estimate the rapidity at which tolerance was established, on account of the increase in pain, there were a few cases that seemed to require a more rapid increase of dosage than others.

This was especially noted in the case of W. D., a man, aged 56, who came under observation, Jan. 22, 1933. He was operated on and a gastro-enterostomy was done for relief of pyloric obstruction due to cancer, February 15. After operation he gained weight and resumed his work until the early part of May, when he developed severe pains in the stomach. He was then started on $\frac{1}{96}$ grain (0.00065 Gm.) of dilaudid by mouth every three hours. He did not obtain relief of pain until after the dosage was increased to $\frac{1}{48}$ grain (0.001 Gm.). Finally, $\frac{1}{24}$ grain (0.0027 Gm.) gave relief for about two hours, and $\frac{1}{6}$ grain (0.01 Gm.) by suppository at night gave relief for several hours but did not make him sleep. The patient was then given amytal and chloral, which were poorly borne by the stomach. Finally, on August 4, he was placed on morphine sulphate $\frac{1}{4}$ grain (0.016 Gm.) orally every three hours, which caused him to sleep more than formerly. He was practically moribund until his death, Sept. 15, 1933.

In several cases habituation was suspected, but on account of the constant pain the drug was not withheld and therefore its existence was not definitely determined. It was not considered that tolerance and habit formation were coincidental.

## UNTOWARD SIDE ACTIONS

Undesirable side effects were not evident in most cases. Nausea, even in malignant conditions of the intestinal tract, was noted but four times in this series. These patients also had nausea from morphine. Two of them were not nauseated by codeine. As a rule, however, many who had gastro-intestinal disturbances from morphine tolerated dilaudid without this undesirable consequence.

An example of the usual response is found in the history of P. L., a woman, aged 27, who first came under our observation in July 1932. A diagnosis of carcinoma of the cervix was made and a hysterectomy was done at the University of Michigan, Feb. 21, 1932. In April 1932 she was given radium to the affected region. Shortly after this she began to have severe pain in the lower abdominal wall. The pain increased and she was admitted to the Barnard Free Skin and Cancer Hospital, June 3, when it was noted that she had considerable tenderness in the right lower part of the abdomen. The abdominal incision was stony hard. The impression was that the patient had a cervical recurrence with implantation into the abdominal scar. She required morphine for relief of pain from June 3 to June 20. She was receiving $\frac{1}{3}$ grain (0.02 Gm.) of morphine sulphate hypodermically every three hours, and occasionally more frequent administration was necessary. She obtained considerable relief from pain but tolerated morphine very poorly, having almost constant nausea and loss of appetite.

She was given a suppository containing $\frac{1}{10}$ grain (0.006 Gm.) of dilaudid night and morning, with absolute relief from pain, as well as relief from nausea and a consequent improvement in appetite. After roentgen therapy she gained some weight and was discharged from the hospital.

On returning to her family physician she was unable to obtain dilaudid and it was learned that morphine, which she took again, was tolerated poorly as before. She was then given dilaudid, $\frac{1}{8}$ grain (0.008 Gm.) in suppositories every eight hours with considerable relief until her death, Dec. 20, 1932.

One of the patients who could not tolerate dilaudid was F. B., a man, aged 55, observed in the clinic from September 1931 until Dec. 29, 1933. He had a carcinoma of the left buccal mucous membrane, with metastases to the submaxillary nodes. Oct. 5, 1933, he was put on dilaudid. He experienced considerable relief from pain for two days, when it was noted that the medicine caused nausea. In spite of the fact that nausea was noted even when dilaudid was disguised, he obtained relief from pain. In this case dilaudid was administered by mouth only and not hypodermically or by suppository.

Constipation was never a troublesome factor. Many patients, especially those able to eat properly, experienced no costive symptoms. Constipation was present in most patients on soft or semisolid diets before dilaudid was given and was thought to be slightly increased in some instances.

While Krehl,[3] Hemmerling,[4] Trautmann[5] and Winternitz[6] reported marked effect on the respiratory center, this was at no time objectionable in the management of our 114 cases. Dreyer,[7] in a series of patients at Barnes Hospital, observed a marked slowing of respiratory rate in one case following a dose of $\frac{1}{32}$ grain (0.002 Gm.).

Despite the fact that tolerance and habituation to the drug are undoubtedly more common than physicians were formerly led to believe, deterioration of character was much less marked than had been noted with morphine. Most patients approached death with less anxiety and, consequently, with a better morale than had been noted before the use of dilaudid.

## CONCLUSIONS

1. Dilaudid is an efficient analgesic in the control of constant pain. It is more helpful in cancer than any other opiate I have used.

2. In order to obtain continuous relief of constant pain, the method of administration is important. The doses should be administered with sufficient frequency to permit continuous effect.

3. Although in the type of case that I observed the detection of habituation was difficult, I believe that dilaudid is less habit forming than morphine. There was less deterioration of character and better morale in patients who were treated with dilaudid than in patients treated with other drugs.

4. The untoward side effects were less troublesome than those of other opiates.

607 North Grand Avenue.

3. Krehl, L.: München med. Wchnschr. **73**: 596 (April 9) 1926.
4. Hemmerling, H.: München. med. Wchnschr. **73**: 597 (April 9) 1926.
5. Trautmann, Edgar: München med. Wchnschr. **73**: 1747 (Oct. 15) 1926.
6. Winternitz, H.: Deutsche med. Wchnschr. **55**: 480 (March 22) 1929.
7. Dreyer: Personal communication to the author.

## ABSTRACT OF DISCUSSION

### ON PAPERS OF DRS. EDMUNDS, EDDY AND SMALL, DR. HIMMELSBACH AND DR. STROUD

DR. TORALD SOLLMANN, Cleveland: The work reported by Drs. Edmunds, Eddy and Small is a notable attempt to develop a new drug. No one can predict whether it will be entirely successful, but already the work has added something material to existing knowledge. Even if it had not done so, it would be worth while as an illustration of how such problems should be approached. The outlook of improving on morphine in one way or another is good. There has long been one useful modification in codeine, and the dilaudid observations as reported by Dr. Stroud are also promising. It must not be forgotten, however, that diacetylmorphine seemed a panacea for a year or two. Dr. Himmelsbach's interesting work in a sense grew out of the collaboration that led to the investigation that was described by Dr. Edmunds and his co-authors. Addiction tendency is difficult to test. Codeine is a noted illustration: The codeine habit is a rarity at the present time and the use of snuff is a rarity, but it does not follow that snuff cannot form a habit. To the contrary, tobacco snuffing was universal a hundred years ago. Similar considerations may very well apply to codeine. There are many factors that enter into the production or the actual employment of a habit-producing drug. Dr. Himmelsbach has sketched these; side effects, costs, fashions, all enter in. A drug might be a very effective addiction drug and never be used because it did not happen to become commonly known. One must therefore attempt to study the habit-producing ability of a drug by objective methods and not merely by statistics, which might change completely almost overnight. The method that Dr. Himmelsbach reports seems to have worked out that problem successfully. It has the important advantages, first, that it doesn't make any victims and, second, that it uses patients who are known to be susceptible to drug habits; theoretically all are, but practically there is a great difference. With this method, I feel convinced that one is able to say certainly whether a drug is capable or incapable of producing a habit, without waiting for a tragic clinical demonstration.

DR. NORMAN A. DAVID, Morgantown, W. Va.: I should like to point out the similarity between dilaudid and the new compounds such as the desoxymorphines, which Dr. Edmunds and his co-workers believe will be most useful practically. These two compounds differ only that in dilaudid the alcoholic hydroxyl (of morphine) has been replaced by oxygen, while hydrogen has been substituted in the desoxymorphines. I should like to ask whether it is possible that the oxygen containing derivatives may prove pharmacologically more effective than the hydrogenated ones. Usually it is thought that oxygenated compounds are more active, at least chemically, than those with hydrogen. Dr. Himmelsbach answers the clinician's query as to whether or not codeine is habit forming. However, a question or two arises. Could it be possible that when codeine is abruptly substituted in the morphine addict this closely related opiate (codeine) in some unknown way delays the excretion of morphine that otherwise would take place? Then, when codeine is acutely withdrawn after the short period of eighteen to twenty days of substitution, could the resultant abstinence symptoms be due in part to the eventual excretion of this residual amount of morphine? For the past year I have been making tests of dilaudid in comparison with morphine in a study of their effects on the basal metabolism, tactile discrimination and other body functions. I found that the usual 2 mg. (1/32 grain) dose of dilaudid given subcutaneously produced slightly greater loss of tactile discrimination and lowering of the metabolic rate than 16 mg. (¼ grain) of morphine sulphate. Consequently, I am interested in the statement of Dr. Stroud that dilaudid in small doses has little or no hypnotic effect. Nor have I been as fortunate as Dr. Stroud in obtaining a relative freedom from side actions in patients given dilaudid, although compared with morphine the incidence was appreciably less. There is no doubt in my mind that dilaudid offers definite improvement as an opiate over morphine. However, I await anxiously for the clinical reports on the trial of the new compounds developed by Drs. Edmunds, Eddy and Small.

DR. HAROLD S. DIEHL, Minneapolis: The possibilities of codeine addiction interest me because of the extent to which my associates and I have been using codeine with papaverine in the treatment of acute coryza. We have used ¼ grain (16 mg.) of codeine with ¼ grain (16 mg.) of papaverine, in an average dosage of five capsules a day over a two-day or occasionally three-day period. I should like to ask Dr. Himmelsbach whether he thinks there is any possibility of addiction to codeine used in this dosage over such a period of time.

DR. NATHAN B. EDDY, Ann Arbor, Mich.: I was especially interested in Dr. Stroud's remarks about the possibility of addiction. The evaluation of addiction experimentally, that is, in animals, is exceedingly difficult. Nevertheless, we have made some attempts in that direction and have administered dilaudid, along with other substances, to different species of animals, with the intent of determining whether or not these substances will produce tolerance, whether or not the presence of any abstinence or withdrawal symptoms can be determined after the substances have been given over a prolonged period. There is no question in our minds that experimentally it can be shown that the animals become tolerant to dilaudid as they become tolerant to morphine, except that perhaps the tolerance develops a little more slowly. Also, there is no question in our minds that in monkeys abstinence symptoms will develop if dilaudid is given over a sufficiently long period of time. That is especially noteworthy in connection with observations previously reported on the administration of different opiates to monkeys. Monkeys develop abstinence symptoms after they have had morphine; they will also develop abstinence symptoms after they have had dilaudid. They do not develop those quite as quickly as they do after morphine. The effective ratios of the different effects of dilaudid to the same effects of morphine vary. On the whole, our impression is that the effective ratios of dilaudid to morphine for therapeutic effects are very close to the ratios of the toxic doses, so that the margin of safety with dilaudid is little different from the margin of safety with morphine. Dr. David raised the question of the relative value of the substitution of the hydroxyl by oxygen or by hydrogen. So far as minimal effective dose is concerned, the substitution by hydrogen is very much more effective than substitution by oxygen. The ratios of effective doses when one substitutes by hydrogen, as in dihydrodesoxymorphine-D, are very much greater than when one substitutes by oxygen, as in dilaudid. The margin of safety when one substitutes by hydrogen is very much greater than when one substitutes by oxygen. The duration of effect, on the other hand, is probably somewhat shorter when hydrogen is the element substituted. Up to the present time, we have not been able to develop abstinence symptoms with dihydrodesoxymorphine-D. The animals do become tolerant to this new substance.

DR. C. K. HIMMELSBACH, Fort Leavenworth, Kan.: In reply to Dr. Diehl's question, Drs. Shibley and Spies pointed out in their paper that the common cold rarely lasts more than ten days and Dr. Diehl followed it with his statement that treatment with codeine and papaverine materially shortened this period. I doubt, except in extremely susceptible cases, that the codeine and papaverine combination as prescribed by Dr. Diehl would result in conferrence of addiction. However, in individuals particularly susceptible to addiction the euphoric effects of the drug have resulted from a single dose. Codeine possesses minimal euphoric properties compared to morphine. In reply to Dr. David, I may state that it has never been shown that codeine inhibits the excretion of any drug. There is no reason to suppose that it would inhibit the excretion of morphine. It is well known that the excretion of morphine is essentially the same in the nontolerant and the completely tolerant organism. The two weeks period of complete substitution of codeine would undoubtedly rule out retarded excretion of morphine.

DR. C. MALONE STROUD, St. Louis: I should like to emphasize the need of giving continuous relief, if possible, to patients who are in constant pain. Before the advent of dilaudid, an attempt was made to give continuous relief to patients with painful carcinomas by administration of codeine and morphine. The by-effects of these drugs almost invariably became distressful in prolonged cases. Dilaudid gave continuous relief, in most instances, without producing troublesome symptoms.

# THE BIOLOGIC EFFECTS OF THYMUS EXTRACT (HANSON)

## ACCRUING ACCELERATION IN GROWTH AND DEVELOPMENT IN SUCCESSIVE GENERATIONS OF RATS UNDER CONTINUOUS TREATMENT WITH THYMUS EXTRACT

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In this investigation we believe that we have learned something suggestive concerning the thymus gland and what is equally important, perhaps, we have evolved a novel procedure for the study of this and possibly other endocrine products. Following the continuous administration of thymus extract to successive generations of parents, marked acceleration in the rate of growth and development has been observed during the early life of the offspring, particularly of the third and later generations. Thus the rate of development encountered in the fifth generation of young rats born of four generations of thymus treated forebears is almost beyond belief.

### METHODS OF EXPERIMENTAL PROCEDURE

A colony of twelve white rats was secured from the Wistar Institute, June 16, 1933. These were divided into test and control groups. The test animals have been subjected to date to the intraperitoneal injection of 1 cc. of thymus extract (Hanson) daily, even during the periods of pregnancy and lactation. Litter mates born to these rats have been mated in pairs and these have likewise been subjected prepubertally or after they have reached maturity to intraperitoneal injection of thymus extract. Each succeeding generation has likewise been so treated and the effects on parents and on the offspring noted. Thus, original test animals of the first generation ($F_0$) have undergone continuous treatment since June 16, 1933, the $F_1$ generation since Sept. 10, 1933, the $F_2$ generation since Sept. 25, 1933, the $F_3$ generation since Jan. 19, 1934, and the $F_4$ generation since April 15, 1934. In the young, treatment has usually been begun from the sixteenth to the twentieth day after birth in the prepubertal group and from the fortieth to the sixtieth day in the mature group. Numerous controls have been employed. At the present time we have reached the fifth generation of thymus treated rats and have between 300 and 400 rats in our colony.[1]

The rats are confined in pairs in circular mesh wire cages the floor of which is covered with excelsior. Cups for food and water are attached to the wall of the cages. All rats used were placed on a diet containing the following ingredients to each 100 parts: rolled oats 15, hominy 60, dried meat scraps 14, Dryco 10, sodium chloride 1. To 100 Gm. was added cod liver oil in the amount of 1.25 cc. Additional nutriment consisted of diluted milk daily and greens twice a week. Later orange juice was added to the diet at the suggestion of Dr. H. H. Donaldson. The quantity of food was not fixed. They were given daily more than ample for their needs, the food remaining at the end of twenty-four hours being discarded. Water was ingested ad libitum.

All twelve rats originally used were of Wistar strain and of known age and known parentage. Eight of these were divided into mature and prepubertal test and control pairs, each pair consisting of litter mates. The remaining four mature animals were segregated according to sex. One male and one female were injected and the others used as controls.

Up to April 16, over a period of ten months, we have followed two pairs of thymus injected rats in the $F_0$ generation for ten and six months, respectively. From their offspring, test and control pairs have been mated and the same procedure has been followed in each succeeding generation. Our experiments can be divided into three groups: (1) those pertaining to continuous treatment, daily intraperitoneal injections of rats carried on in succeeding generations, (2) those in which treatment (daily injections) was interrupted for one or more generations, and (3) feeding experiments in which the thymus extract was administered by mouth. In group 1, three series of animals were studied, 1A, the original group of rats subjected to injection of thymus extract (Hanson) since June 16, 1933, 1B, a second series of Wistar rats subjected to an identical form of treatment, to act as a control to the first group (treatment started on Oct. 5, 1933), and 1C, a group of rats subjected to similar treatment with a new preparation of thymus extract (Hanson) supplied from another source.

TABLE 1.—*Chemical Composition of Extract*

| | Mg. per 100 Cc. |
|---|---|
| Total nitrogen, micro-Kjeldahl | 5.75 |
| Calcium | 4 |
| Inorganic phosphorus | 12.8 |
| Lipoid phosphorus | 19 |
| Sodium chloride | 365 |
| Cholesterol | 10 |
| Uric acid | 14 |
| Reduced and oxidized sulphur compounds calculated as glutathione | 15.8 |

### THE NATURE OF THE THYMUS EXTRACT USED

The extract used in these experiments was prepared by Hanson[2] in 1930 briefly as follows: The thymus glands from 2 to 6 weeks old calves were extracted in 0.5 per cent hydrochloric acid solution with the aid of heat. This extraction differs from the extraction from parathyroids by Hanson simply in the degree of acidity used in its preparation. This preparation is extremely stable and is entirely potent and satisfactory for injection in rats even after being kept at room temperature from two and one-half to four years. The extract was golden yellow and resembled bouillon in taste and smell. It has a $p_H$ of about 5.0 and is nontoxic in relatively large doses and nonirritating locally on injection.

Chemical analysis of this extract made at three years yielded the results given in table 1.

The strength of the extract used represented 0.6 Gm. of raw calf thymus to 1 cc.

From the Samuel Bell Jr. Laboratory of the Philadelphia Institute for Medical Research in the Philadelphia General Hospital, the Laboratories of the Philadelphia General Hospital, Philadelphia, and the Hanson Research Laboratory, Faribault, Minn.

1. In the text, $F_0$ animals are referred to as first generation and $F_4$ as fifth generation, respectively.

2. Hanson, A. M.: Treatment of Cancer with Thymus Extract, J. A. M. A. **94**: 653 (March 1) 1930.

### BIOLOGIC DATA ON NORMAL AND CONTROL RATS

*Controls.*—Our controls are of two kinds: (1) the published data obtained in the study of rats at the Wistar Institute, summarized in The Rat, by Dr. H. H. Donaldson, and (2) three pairs of Wistar bred rats and their descendants paired as litter mates and carried along in our laboratory on the same food and under the same conditions as the thymus treated test rats.

The biologic data on all our control animals conforms in general with those published from the Wistar Institute. However, our rats were subjected to daily intraperitoneal injections of salt solution containing 20 per cent of glycerin over a period of several months. As this has been found to be without effect, it has been discontinued. At the present time a control series is being run in which injections of an extract made by Hanson from lymphatic glands are being administered.

The comparison of our figures with those of Dr. Donaldson is shown in table 2.

Thus it is evident that our control animals evidence somewhat earlier gonadal development and maturity than the Wistar rats. In addition it should be stated that the weight curves of the two series of animals are identical up to twenty days, after which the weight of our animals lagged somewhat as compared with the Wistar strain.

TABLE 2.—*Comparison of Control Rats with Those of the Wistar Institute* *

| | Strain | |
|---|---|---|
| | Wistar Institute | Philadelphia Institute for Medical Research† |
| Number in litter | 6.1 | 4.9 |
| Ears open | 2½ to 3½ | 2½ to 3 |
| Teeth erupted | 8-10 | 9-10 |
| Hair appeared | 16 | 12-16 |
| Eyes open | 14 to 17 | 14 to 17 |
| Testes descended | 40 | 31-40 |
| Vagina open | 72 | 55-62 |
| Comment | On a varied breeders' diet | On an adequate stock diet |

* The measure of time is days.
† Based on 104 animals.

### RESULTS OF CONTINUOUS TREATMENT OF SUCCESSIVE GENERATIONS OF RATS—SERIES 1A

As the result of continuous treatment of successive generations of rats with 1 cc. intraperitoneal injections daily the test male animals became somewhat heavier than their controls, the females becoming heavier after mating. The test animals seemed to breed more frequently and had larger litters of heavier average weight. Thus the mature test pair cast nine litters of seventy-eight plus animals and the mature control pair cast three litters of eight animals by March 13, 1934, at which time the control mother died. The prepubertal test pair cast four litters of twenty-seven plus animals, the female dying during labor, Nov. 14, 1933, while the prepubertal control pair cast two litters of ten plus animals for a corresponding period.

*Growth and Development of the Second Generation Rats* ($F_1$).—In all, ninety-three rats were born in thirteen litters to two pairs of test animals of the first generation ($F_0$) under treatment. The biologic data indicate rapid breeding on the part of the parents, an average period between casting of litters of 28.5 days for the test animals as compared with 42.5 days for the controls. The average litter was composed of more than seven rats, as compared with less than five per litter for the controls. The animals at birth were approximately 10 per cent heavier than the controls. Seventy-nine per cent of the offspring of the test animals survived, as compared with 37.8 per cent of the offspring of the controls.

No precocity was observed in this generation in the earlier litters relative to the opening of the ears, the eruption of the teeth, the development of fur, the opening of the eyes. However, gonadal development and maturity were somewhat earlier than normal. In the later litters, definite evidence of precocity began to appear. Thus in the tenth litter (cast after April 16) the animals at birth were considerably larger than normal. The animals were covered with fur and opened their eyes by the tenth day. The tenth litter also evidenced a considerable increase in the growth curve at 20 days, the test rats weighing 46 Gm. as compared with 28 Gm. for the controls.

In summarizing the results of treatment in the second generation ($F_1$), it might be said that treatment of the parents with thymus extract (Hanson) apparently results in an increased number of litters, an increase in the size of the litters, an increased birth weight, and a decreased infant mortality compared with our controls. In later litters born to such parents, evidences of precocity appear; i. e., increased birth weight, earlier eruption of the teeth, appearance of fur, opening of the eyes, descent of the testes and opening of the vagina.

*Growth and Development of Third Generation Rats* ($F_2$).—In test animals of this generation, i. e., animals born of two generations of rats treated with thymus extract, the rate of growth and development was astonishing. In all, 134 rats were born in seventeen litters to five pairs of second generation ($F_1$) rats under treatment with thymus extract. The interval between gestations was 39.6 days as compared with 42.5 days for the controls. An average of 7.8 rats per litter was cast as compared with 4.9 in the control litters. The average birth weight was 5 Gm. for the test animals as compared with 5.3 Gm. for the controls. Seventy-six per cent of the test young survived as compared with 37.8 per cent of the controls. The ears opened on the first day. The incisors erupted from the first to the second day. The animals were covered with fur from the third to the sixth day. The testes descended from the fifth to the thirteenth day. The vagina opened from the twenty-third to the thirty-second day.

*Rate of Growth and Development in the Fourth Generation* ($F_3$).—The fourth generation consists in all of 100 animals born in seventeen litters to eight pairs of rats treated with thymus extract. The parents, grandparents and great grandparents had all received injections of thymus extract (Hanson). The interval between casting litters averaged thirty-four days as contrasted with a period of 42.5 days in the controls. The average litter consisted of six animals with a birth weight of 5.3 Gm. as compared with an average control litter of 4.9 animals with an average birth weight of 4.6 Gm. Sixty-nine per cent of the young survived as compared with 37.8 per cent surviving in the control series. The ears opened within twenty-four hours in every rat. The incisors erupted within twenty-four hours. Fur appeared between the second and fourth days of life. The eyes opened on the fourth day. The testes descended from the fifth to the twelfth day and

the vagina opened from the twenty-first to the twenty-seventh day.

*Rate of Growth and Development of Fifth Generation Rats* ($F_4$).—The fifth generation consisted of twenty-one rats born to one pair, nine in the first litter and twelve in the second litter. All nine of the first litter died, apparently from lack of the mother's milk. All twelve of the second litter survived. The average birth weight in these animals was 5.6 Gm. as compared with 4.6 Gm. in the controls. The ears were open at the first inspection and the incisors likewise had erupted. These animals developed hair between the second and third days, the pelt being perfect within seventy-two hours. The animals opened their eyes between two and one-half and three days. The testes descended on the fourth day and the vagina opened on the eighteenth day. So alert and mature were these animals on the third day that one pair was weaned and has never been in the cage with the mother or with any other rats since the third day. These animals found their own water, milk and food supply and have surpassed all their litter mates in weight by 2 Gm. each. On the twenty-fifth day these animals weighed 94 Gm. as compared with 37 Gm. for controls of the same age, practically 150 per cent more.

### RESULTS IN SECOND SERIES OF RATS UNDER CONTINUOUS TREATMENT—SERIES 1B

So incredible seemed the results of thymus injection in our first series of rats that we felt confirmation was imperative. A conference was held with Dr. H. H. Donaldson as soon as the precocity of our third generation test rats was noted. At this conference it was decided to continue treatment of the original group until ten litters could be studied and also at the same time to repeat our experiments, starting with a new series of rats.

Accordingly two pairs of controls were started on daily intraperitoneal injections of 1 cc. of thymus extract (Hanson), Oct. 5, 1933. In this series we find complete confirmation of our earlier results. In the second generation the period between casting of litters is short, varying from twenty-two to twenty-six days. Four litters of the third generation were born between Feb. 22 and May 6, 1934. The average litter was seven and the birth weight nearly 5 Gm. The ears opened within two days. The animals were covered with fur in from three to five days and the eyes opened in from four to five days. At birth these rats appeared normal. They flourished in early life, then faltered and wasted away, apparently from lack of the mother's milk. Two rats of the fourth litter were removed from the mother and placed with a "wetnurse" control mother. They evidenced the same precocity, the testes descending on the fifth day and the vagina opening on the twenty-sixth day.

Thus a repetition of our earlier experiments yielded complete confirmation of our earlier results in striking precocity, in the rate of growth and development appearing in the young of the third generation.

### RESULTS IN A SERIES OF RATS UNDER CONTINUOUS TREATMENT WITH THYMUS EXTRACT FROM ANOTHER SOURCE—SERIES 1C

All the results so far described have been obtained from the use of the original preparation of thymus extract sent to us by Hanson. As has already been stated, this extract was prepared in 1930 and hence has stood for some two and one-half to four years prior to being used. The new preparation of thymus extract was received on Jan. 6, 1934. It was administered intraperitoneally 1 cc. daily as in the other studies recorded. It has been continued over a period of from four to six months.

Six rats of the first series born of old thymus injected rats and hence representing the second generation or $F_1$ were placed under treatment. If this extract had been as effective as the old, the animals born to these three pairs of rats should have evidenced the same degree of precocity as our third generation ($F_2$) rats treated with the original thymus extract. In no instance did the offspring conform to those of our third generation ($F_2$) under treatment with the original thymus extract. Hence we decided that this extract was lacking in potency.

The same type of experiment was carried out with rats of the third generation ($F_2$) under treatment with old thymus extract. Their offspring likewise failed to conform with the expected precocity. From these experiments, which will be recorded in detail later, it

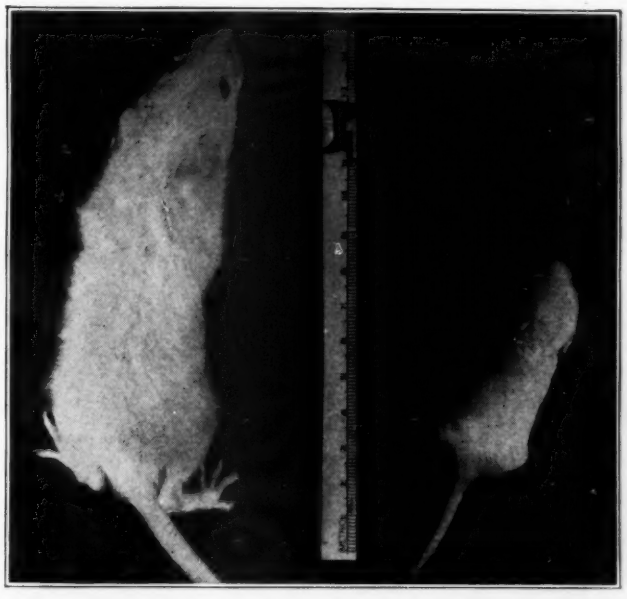

Fig. 1.—At right, control rat 14 days old; at left, third generation thymus test rat 15 days old.

can be seen that the effect of the new thymus extract administered by injection is slight or perhaps lacking. During the six months of treatment, the animals of the second and third generations injected with the new thymus extract failed to manifest the acceleration of growth and development that should have accrued had the animals continued on injections of the original thymus extract.

TABLE 3.—*Development of Thymus Treated Rats Contrasted with Controls*

| | Controls | $F_1$ | $F_2$ | $F_3$ | $F_4$ |
|---|---|---|---|---|---|
| *Average birth weight, grams | 4.6 | 5.1 | 5.3 | 5.3 | 5.6 |
| Ears opened, days | 2½-3½ | 2 | 1-2 | 1 | 1 |
| Teeth erupted, days | 8-10 | 1-9 | 1-2 | 1 | 1 |
| Hair appeared, days | 12-16 | 3-12 | 4-6 | 4-5 | 2-3 |
| Eyes opened, days | 14-17 | 12-14 | 4-6 | 4-6 | 2-3 |
| Testes descended, days | 35-40 | *15-29 | *5-21 | *5-12 | 4-5 |
| Vagina opened, days | 55-62 | *30-45 | *23-32 | *21-27 | 18-19 |

The figures in this table are based on a somewhat different set up than those published in Science and in the detailed paper, which will appear later.

* The low numbers usually relate to late litters in the generation and the high numbers to the first litters born.

average period between casting of litters of 28.5 days

testes descended from the fifth to the twelfth day and



The salient features relative to the accruing acceleration in the rate of development in succeeding generations can be easily appreciated from the data in table 3.

### EFFECTS ON THE OFFSPRING OF RATS OF THE WITHDRAWAL OF TREATMENT WITH THYMUS EXTRACT (HANSON)

An effort has been made to determine the effect of omitting treatment through one or more generations. It was thought that it would be of interest to know whether this effect persisted after cessation of treatment, and if so for what period of time. In this connection we have observed many groups of animals, totaling over 200.

This experiment is difficult of presentation. However, details are available and will be published shortly. The results of interruption of treatment can be stated briefly. Cessation of treatment through one generation usually results in the entire disappearance of precocity. This does not hold in all instances, particularly for the first litter born after cessation of treatment of the parents. Here mild precocity may appear, provided interruption of treatment has not been of long duration.

Fig. 2.—At right, control rat 7 days old; at left, fourth generation thymus test rat, 6 days old, the eyes open.

In the second litter normality is reestablished almost invariably, while the third litter conforms to normal in every instance.

### EFFECTS OF FEEDING THYMUS EXTRACT

An effort has been made to determine whether or not thymus extract is effective when administered by mouth. In order to determine its effectiveness, it has been administered to four pairs of rats, all of which were born to animals having received old thymus extract by injection. In other words, these four pairs of animals represent second generation ($F_1$) rats under thymus treatment. These pairs, had treatment with the old extract been continued by injection, would have shown in all probability the marked precocity already recorded in our third generation ($F_2$) thymus treated rats.

From 8 to 10 cc. of the new thymus extract has been mixed daily with the food of each pair of rats over a period of four months. The first pair of rats cast one litter, consisting of six animals, all of which survived. They showed an average birth weight of 5.3 Gm. Their ears opened on the second day, the teeth erupted from the fourth to the sixth day, hair appeared from the ninth to the twelfth day, the eyes opened from the twelfth to the thirteenth day; the testes descended on the twenty-second to the twenty-sixth day, and the vagina opened on the forty-sixth day.

The second pair had one litter of six, all of which survived. Their average birth weight was 5.2 Gm. Their ears opened on the second day, the teeth erupted on the eighth day, hair appeared from the tenth to the twelfth day, the eyes opened on the twelfth day; the testes descended on the twenty-ninth day, and the vagina opened on the fortieth day.

The third pair cast one litter of twelve animals, all of which survived. Their average birth weight was well over 6.9 Gm. The ears opened on the second day, the teeth erupted on the eighth and tenth days, hair appeared from the tenth to the twelfth day, the eyes opened from the twelfth to the thirteenth day; the testes descended on the twenty-second and twenty-third days, and the vagina opened on the thirty-sixth and fortieth days. No marked precocity was seen in the fourth litter.

It is apparent in these studies that the new thymus extract when fed by mouth does not induce the precocity that would have been expected had these animals received the old thymus extract intraperitoneally. From these results we are convinced that the new thymus extract when administered by mouth has little or no effect. Unfortunately this experiment was not attempted with old thymus. The new thymus extract used intraperitoneally was, as has already been indicated, relatively ineffective. Hence we feel that from these experiments the evidence is not at all convincing and in order to determine whether or not thymus extract is effective by mouth we feel that a similar experiment must be carried out on a series of rats with an extract known to be potent when it is administered intraperitoneally.

### ACTIVITY AND BEHAVIORISM OF RATS UNDER THE INFLUENCE OF THYMUS EXTRACT (HANSON)

The psychic precocity is as striking as the physical in the thymus treated strain of rats. Thus, fifth generation ($F_4$) test animals move about the cage at 3 days of age and appear almost as capable and alert as normal rats of 16 to 20 days of age. These animals will climb out of a wire net enclosure from 3 to 4 inches high and manifest all the activities of normal animals four or five times their age. Weaning is possible at 3 days of age, the little rats finding their own supply of water, milk and food. They nest, burrowing under the excelsior, and find a resting place and have no need of further care from the parents. Animals weaned as early as the third day have fared as well as or better than their litter mates left with their parents.

The thymus treated animals appear to be healthy, contented and docile. Their actions asleep or awake resemble those of normal controls in every way. They do not resent the needle to any great extent, apparently suffering no pain or distress following the injection of thymus extract. We have wondered at times whether the chlorbutanol used as a preservative in this extract might in any way account for the docility observed.

White rats swim instinctively. The young rats swim as soon as their eyes open and they are covered with fur. Thus, our third generation rats swam at the age of 6 and 7 days, our fourth generation rats at 4 and 5 days, and our fifth generation rats at 3 and 4 days. None of these animals would enter water voluntarily,

but when placed in water appear momentarily at a loss and then swim to the nearest ledge. If the water is not too deep, they stand on their hind legs and attempt to spring to safety. Control rats cannot swim until after the eyes open; i. e., until from 14 to 16 days of age.

It should be clearly understood that the effect of thymus extract is confined largely to the rate of growth and development in the young. After sixty days the weight curves of control and test animals approach each other. Eventually in the fully mature animals little difference in size is apparent. Giants do not develop. Thymus is concerned chiefly with the young. To date we have seen no evidence that the life of rats is shortened by thymus, but our experiments have extended only over a year.

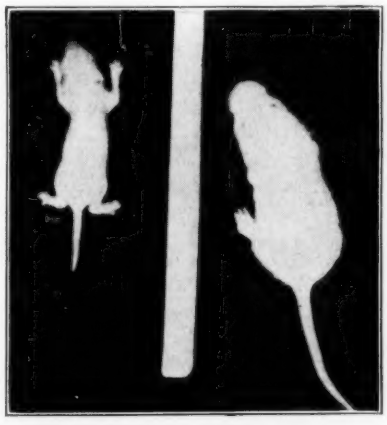

Fig. 3.—At left, control rat 5 days old; at right, thymus treated rat of fifth generation, 3 days old, the eyes open.

## TOXICITY

Large doses of thymus extract (Hanson) are toxic. The administration of 5 cc. intraperitoneally results shortly in temporary incapacitation or collapse. Electrocardiac tracings made in the Heart Station of the Philadelphia General Hospital in conjunction with Dr. Thomas McMillan, head of the department, and Dr. Samuel Bellet reveal interference in conduction and the development of auriculoventricular block. Larger doses kill by complete heart block.

## THE WEIGHT CURVES OF RATS UNDER THE INFLUENCE OF THYMUS EXTRACT

Weight curves of rats under the influence of thymus extract reveal a markedly accruing acceleration in weights in rats of the third, fourth and fifth generations. This is shown in the accompanying chart, in which C represents the controls, $F_1$ the second generation, $F_2$ the third, $F_3$ the fourth and $F_4$ the fifth generation under the effects of excess of thymus. The shaded areas represent the growth of more than 2,000 Wistar rats between Oct. 7, 1933, and Jan. 30, 1934. These curves are based on three litters of controls (eighteen animals), five litters of the $F_1$ generation (fifty-two animals), four litters of the $F_2$ generation (thirty-one animals), two litters of the $F_3$ generation (eighteen animals) and three litters of the $F_4$ generation (sixteen animals). All our animals were on a stock diet and were never mated later than 60 days, whereas the rats of the Wistar Institute were on a varied breeders' diet and were usually not mated earlier than 90 days.

A study of these curves indicates deficiency in growth in our control rats after the twentieth day and a striking and increasing acceleration in the weight of our thymus treated animals of the third, fourth and fifth generations. Our fifth generation rats at all times from the fourth to the fortieth day weighed more than double the control rats and at all times up to 30 days of age outweighed the rats of the Wistar Institute. Between the third and twentieth days our fifth generation rats exceeded the Wistar rats in weight by more than 100 per cent.

After the sixtieth day these curves tend to come together. This will be presented in a later publication.

## SUMMARY

1. The preparation of thymus extract (Hanson) forwarded to us by Hanson is a potent thymus extract, derived from the thymus of young calves.

2. Thymus extract (Hanson) seems to increase the weight and growth of prepubertal and mature male rats and in mated mature female rats.

3. Thymus extract (Hanson) administered to the new-born exerts but little effect on growth and development, although earlier opening of the eyes has been noted at times.

4. Thymus extract (Hanson) administered intraperitoneally to parent rats seems to increase the number and size of the litters and the birth weight of the offspring.

5. The most striking biologic effects of thymus extract (Hanson) are obtained and are most evident in the offspring following continuous treatment by intraperitoneal injection of successive generations of rats.

6. The third generation test animals, i. e., rats born of thymus treated parents and grandparents, are larger at birth and evidence striking precocity in growth and development, interpreted by early eruption of teeth, appearance of fur, opening of the eyes, descent of the testes and opening of the vagina.

7. Successive generations of rats born to thymus injected parents evidence accruing acceleration in growth and development. Thus in the fifth generation teeth have erupted and ears opened on the first day. The eyes opened and the animals were covered with fur by the third day. The testes descended between the fourth and fifth days and the vagina opened in twenty days.

8. In the thymus treated strain of rats the young mature earlier and breed earlier. Thus in the offspring of the third generation of test animals, litters have been cast on the fortieth and forty-fifth days.

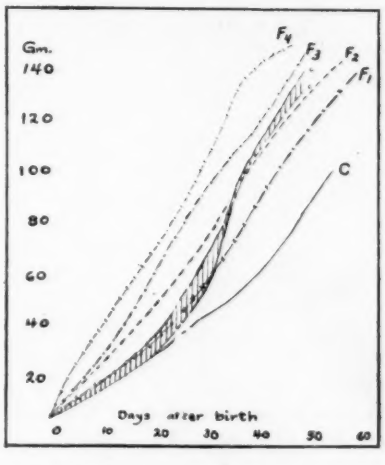


Fig. 4.—Weight curves of thymus test rats and their controls.

9. The effect of thymus treatment is more marked in the offspring than in the parents.

10. Weight curves show an accruing acceleration in each succeeding generation. Animals of the fifth generation weigh more than double normal between the third and the twentieth day.

11. The acceleration and the rate of growth and development in the untreated young born of thymus treated ancestors is apparently not effected through the mother's milk, since in two experiments it occurred

when the young were suckled by a control "wetnurse" mother and did not appear in control animals suckled by thymus treated mothers.

12. Thymus extracts made by Hanson's method are not all equally potent, as evidenced by one preparation secured from another source.

13. It has not been determined as yet whether or not thymus extract by mouth is effective. Our own experiments in this connection are subject to criticism.

14. Interruption of thymus administration for one generation nullifies completely or at least to a large extent the effects of previous thymus administration, even though this treatment may have extended through several generations of rats. The lack of thymus effect becomes more striking in succeeding litters.

15. While precocity is lacking in the early litters born of thymus treated parents, it appears in later litters.

16. Rats under thymus treatment appear unusually docile, healthy and contented.

17. Excessive amounts of thymus extract result in toxicity, as evidenced by increasing auriculoventricular dissociation and eventual heart block.

18. From our own investigations, no claim can be made for the specificity of the thymus in this connection. Control studies bearing on this are imperative and in progress.

CONCLUSIONS

1. Thymus extract (Hanson) has accelerated the rate of growth and development, has hastened the onset of adolescence in the offspring of treated rats, and has seemed to increase the fertility of parent rats.

2. The injection of succeeding generations of parent rats has resulted in the amplification of the effects of thymus extract.

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# CHRONIC ATOPIC ECZEMA (NEURODERMATITIS) IN CHILDHOOD

LEWIS WEBB HILL, M.D.
BOSTON

It is common for infantile eczema to improve with age and to disappear during the second year. This is not always so, however. In a series of 900 cases of eczema in infants and young children, 210 occurred between the ages of 2 and 12 years. In 127 of these the eczema had existed since early infancy; in eighty-three it began after the second year. It is the first group that I propose to discuss: chronic eczema in childhood, which had its inception in early infancy.

This eczema is characterized by papulation and thickening, but with little vesiculation. The classic case shows involvement of the antecubital and postpopliteal spaces, the wrists and the neck. The skin in these areas is dull red and thick, with a few small papules which are excoriated from scratching. It is often very thick and leathery, without much papulation, but with many furrows, and a great exaggeration of the normal lines of the skin; that is, lichenification. Itching is intense, and much of the pathologic condition of the skin is caused by long continued rubbing and scratching. Sometimes the eruption may be scattered all over the body in small plaques and papules.

Dermatologists have given many names to what I shall call "chronic atopic eczema," the most common of which are "flexural pruritus," "Besnier's prurigo" and "neurodermatitis." Since the disease in childhood, although histologically not strictly an eczema, is the same process, modified by chronicity, that these children had when they were infants, which, according to American nomenclature, was eczema, chronic atopic eczema seems the best term for pediatricians to use. It is atopic because reagins are found in the blood, because it is often associated with the other atopic disorders, hay fever and asthma, and because it usually gives positive intracutaneous or cutaneous tests to proteins. It is to be distinguished from contact dermatitis, which is allergic but not atopic, because reagins are not found in the blood, because it is not associated with hay fever or asthma, and because scratch or intracutaneous tests with proteins are negative but patch tests with nonprotein substances are positive.

Some dermatologists would agree with this nomenclature; some would prefer the term "neurodermatitis."

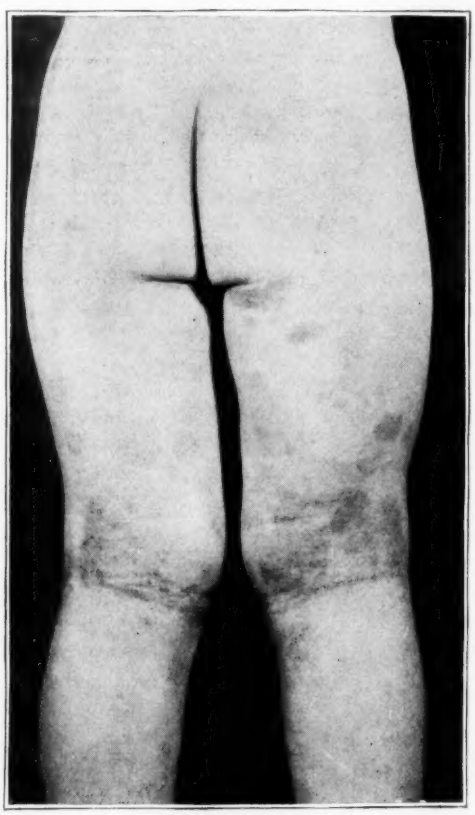

Fig. 1.—Typical eruption.

It is reasonable to suppose that the basic etiology for the disease in these children is much the same as it was when they were infants, and that the difference in clinical appearance is due to chronicity and long continued external trauma.

Protein skin tests were done by the cutaneous method in seventy-four of the more severe cases in the group under discussion, with positive reactions in 77 per cent. In 100 eczematous infants under 1 year of age, skin tests were positive in 63 per cent.

Positive reactions were obtained in thirty cases to egg, in fourteen to cat hair, in nine to wheat, in nine to spinach, and in six to milk. Various other foods and epidermals gave reactions in from one to five cases. The occurrence of egg reactions is less (40 per cent)

From the eczema clinic, Children's Hospital, and the Department of Pediatrics, Harvard Medical School.

Read before the Section on Pediatrics at the Eighty-Fifth Annual Session of the American Medical Association, Cleveland, June 14, 1934.

than it is in infants under 1 year (54 per cent), and it is interesting to note that, while the next most common protein to give reactions in infants is lactalbumin, cat hair takes its place in older children. It may be said from my own experience, as well as from that of others, that most children who have had eczema from infancy are atopic. It is likely that other factors are

Fig. 2.—Typical excoriated eruption.

sometimes added, notably staphylococcic and fungous infection.

The treatment of eczema may be summed up in six words: Find the cause and remove it. The first thing in dealing with these patients, therefore, is to determine the causative allergens, if possible, from the history, secondly by skin tests, and, if these are negative, possibly by elimination diets. A positive skin reaction to a food or epidermal by no means always indicates that the eczema is due to that particular allergen.

It has been brought out by Rowe that in food atopy skin tests are sometimes negative in spite of the fact that symptoms are due to some particular food. With this in mind, he devised his ingenious series of elimination diets, which have often proved of value in determining food sensitivity in adults. This procedure is not so well adapted for use in eczema as it is in other food atopies, such as abdominal pain and migraine, for improvement in most cases of chronic eczema is so slow and there are so many other factors involved besides the diet that it is often difficult to judge whether or not a certain diet is doing any good. Also it is not so easy to use these diets for children as it is for adults. Furthermore, with young children it is well not to experiment too much with the diet. In spite of these certain disadvantages the principle is sound, and I have used Rowe's diet 1, slightly modified, as a basic diet, and have then added every week other foods, in an attempt to determine what was or was not harmful. This basic diet consists of rice, lamb, rye crisp wafers, string beans, carrots, celery, peaches, pears and jell-o. Such investigation is worth while in all severe cases with negative skin tests, but I have seen very few clean cut results with it.

If positive skin tests are found, there are two possibilities in treatment:

1. Removal of the positive foods from the diet, or other positive allergens from the environment.
2. An attempt at hyposensitization, either specific or nonspecific.

Hyposensitization is valuable in hay fever; in asthma it is sometimes worth while; in chronic atopic eczema it may be rarely useful in a limited number of special cases, but by no means as a routine measure.

Specific hyposensitization has been attempted in one of three ways:

1. By feeding gradually increasing amounts of the offending food.
2. By intracutaneous or subcutaneous injections.
3. By the propeptan method of Urbach, in which, before each offending food is eaten, a specific peptone tablet is taken by mouth.

Nonspecific hyposensitization has been attempted by the injection of nonspecific proteins, such as milk, typhoid vaccine, blood or various peptones, or by autochemotherapy.

When I first began working with infantile eczema, the question arose whether any of the methods directed at hyposensitization should be commonly used. After I reviewed the literature, and after talking with various allergists and immunologists, it seemed that these were of very doubtful value in eczema at any rate and not to be compared to hyposensitization in hay fever or even in asthma. In the first place, it is likely not to work,

Fig. 3.—Close up of figure 2.

and, if it does work, its effect is more often temporary than permanent; in the second place, it may be such a long and tedious procedure that it is not worth while attempting unless very definite beneficial results can be expected; in the third place, it is very difficult to evaluate results in such a chronic process as this type

of eczema, and the skin often becomes worse instead of better during treatment. Most of those in America who have used propeptan therapy are not at all enthusiastic about it, and Urbach himself says that it is of no value in "neurodermatitis" (chronic eczema). Another difficulty is that in chronic eczema there is almost always multiple sensitization; the situation is

Fig. 4.—Lichenification.

different from that in hay fever, in which a single and very definite sensitivity is likely to exist, or in asthma, in which the allergic manifestations are periodic instead of continuous and there are not so often the secondary pathologic changes in the sensitized tissues that there are in chronic eczema.

If there were any method of specific or nonspecific hyposensitization that would cure eczema, it would be universally used. Instead, most allergists are not in favor of it, and those who are use widely varying methods. One must conclude that at the present time for atopic eczema (note that I do not say contact dermatitis, which is a different thing) there is no method of specific or nonspecific hyposensitization that can be depended on to give good results in the majority of cases. For this reason I have rarely attempted it except in a few cases in which it has been obvious that the eczema was almost entirely due to very definite sensitization to one particular common food. I think also that hyposensitization applies more, both in theory and in practice, to those individuals who have really violent symptoms when they come into contact with or eat the substance to which they are sensitive. Such is rarely the case in eczema, for any child who reacts violently to some food never takes enough of it to give him eczema, as it is immediately apparent to the mother that the food in question is a poison to him.

Hyposensitization is not well adapted for use when the original eczema is present, and if tried at all it is better first to prove that it is due to the suspected allergen by removing the latter from the diet and noting results. Then, if after a considerable period of freedom from symptoms eating of the food again causes symptoms, it may be attempted by the oral method.

There is, however, no very good answer to the eczema problem until there is available some permanent and effective method of doing away with atopy in general, perhaps either by changing the chemical balance of the body cells in some way so that the atopic reaction cannot take place or by some method of nonspecific hyposensitization. Nonspecific, because there is multiple sensitivity in so many cases that what is desired is not hyposensitization to one or two proteins but a direct abolition of the atopic state itself, so that hay fever, asthma and eczema, or any other condition which depends on an underlying atopic constitution will each be treated in the same way. Unfortunately there is today no effective means of bringing about this ideal of nonspecific hyposensitization.

In eczema, avoidance of the offending allergens is at present in almost all cases the most practical treatment, and often in the course of time the child becomes spontaneously desensitized. There are ordinarily not enough food sensitivities to prohibit a satisfactory diet, and there are many effective methods of getting rid of a cat. If apparently offending foods can be withdrawn without harm to the child, all well and good; if he is sensitive to so many that withdrawal is likely to cause loss of weight, it is better to treat the eczema locally and to forget about the diet. Every pediatrician has seen too many babies and young children with eczema dieted too rigidly, often with no benefit to the eczema and much harm to the child.

Proper local treatment is important. It must be remembered that in this sort of eczema the skin disturbance has lasted a long time; the skin has been insulted by many things, and for these reasons more or less permanent changes have been produced in it. With infantile eczema, in which no such chronic changes have taken place, if there is definite sensitivity to one particular food, withdrawal of this is often followed by speedy results. This is not so often true of chronic eczema, and little can be accomplished without skilled

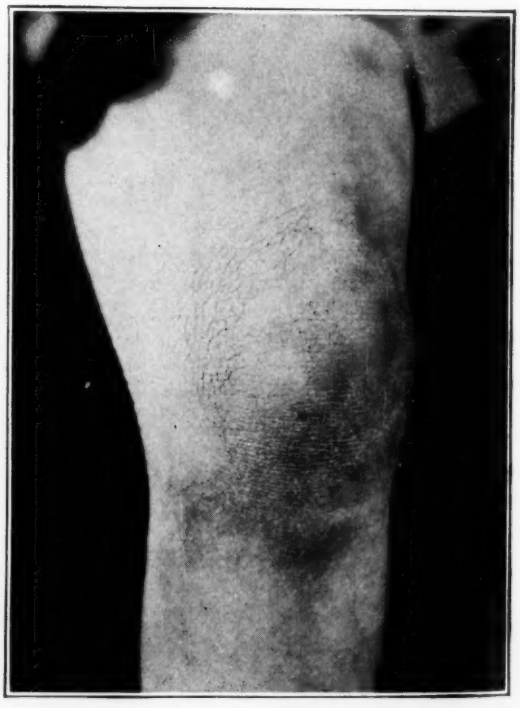

Fig. 5.—Lichenification.

and persistent local treatment. The essential change in the skin is one of cellular infiltration; therefore strong remedies are usually indicated, such as crude coal tar or wood tar preparations, Swartz's ointment (mercurochrome with salicylic acid), and sulphur with salicylic acid. If there are small circumscribed patches, painting with crude coal tar undiluted is very effective, especially for cracks at the lobe of the ear.

Chronic eczema is not cured over night, and local treatment must be persisted in even if results are at first disappointing. In cases in which there is much lichenification, roentgen treatment is usually of value in resolving the infiltration and in relieving the itching. Its results are likely to be only temporary, however, and with repeated exposures there is some danger of causing atrophy of the skin.

It is very difficult and usually misleading in any such chronic condition, which is so subject to relapse, to tabulate therapeutic results in percentages of cured, improved, and so on, and I shall not attempt it. It may be said, however, that results are fairly good. Some patients are cured, many are relieved, but recurrences are common. There are a few cases of the diffuse type, with redness and thickening all over the body, for which little can be done, even by the most skilled dermatologist.

To talk about eczema is easy and always pleasant; to cure the patient is quite another matter, and in spite of allergens, reagins, skin tests, elimination diets, and so on, the actual practical treatment is not entirely satisfactory, whether by dermatologist, allergist or pediatrician, or by all combined. It can never be so until there is available some good and consistent method of attacking the atopic state itself.

I am not in the least pessimistic about eczema—merely trying to see the situation honestly as it is and not as I would like to see it. The understanding of this disease is constantly increasing, but there are many things still to be explained, and the kernel of it has by no means as yet been reached. In no disease is it easier to make erroneous observations or to draw false conclusions from correct observations.

There is no subject in pediatrics in which a sound conservatism and an unbiased critical attitude are more necessary.

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## ABSTRACT OF DISCUSSION

DR. MARION B. SULZBERGER, New York: Dr. Hill's ideal of finding the cause of infantile eczema and then removing it is, with present methods, often impossible to realize; for substances that are the actual causes of the eczema frequently give negative skin tests and, on the other hand, not all substances that give positive skin tests prove to be the etiologic agents. Egg white, for example, gives many positive wheal reactions, even in infants whose eczemas continue without ingestion of egg constituents in any form or by any conceivable route. Therefore the various test methods, including elimination diets, are still so likely to give inconclusive, not to say confusing, results that they must often be dispensed with. While skin tests are essential in the scientific studies of eczema, and sometimes indispensable even in the management of the individual case, in many routine cases a logical plan of therapy can first be tried. This may give satisfactory results and obviate the necessity for skin testing. Local and roentgen therapy are sometimes sufficient to achieve a cure, but the manner in which the local remedies are applied may determine success or failure of the treatment. Simple change of environment, or hospitalization, sometimes causes an abrupt remission. In the immunologic approach, the differential diagnosis between contact eczema, atopic dermatosis and seborrheic dermatitis should be made whenever possible. This is often difficult. However, it is most desirable, because the elimination of environmental and dietary allergens is presumably of no benefit in most cases of true seborrheic dermatitis. In both atopic and contact dermatoses, the practical immunologic approach may best be expressed by the word "change." Change the environment and the diet, as far as this is compatible with the maintenance of health and proper nutrition. Particular attention should be paid to the bedding material and to the sources of dust in the room. All who have seen rapid cures under simple elimination of one or more of the commoner causative agents will agree that, although unfortunately rare, these cases justify the recommendation to study the infant's environment and to change it as much as possible, without jeopardizing the general state of nutrition and health. Fungi, as mentioned by Dr. Hill, may prove to play an important rôle in some infantile eczemas. Particularly fungi of the Monilia group seem to me to be most suspect, for these organisms are ubiquitous, are strong sensitizers, and have been proved capable of causing eczematous eruptions in adults. What I have said about fungi may apply, but to a less degree, to other micro-organisms. For another reason it is important to differentiate atopic from contact dermatitis whenever possible. It is probable that, in pure contact dermatitis in infants, foods will be of little or no significance, and elimination diets of little or no promise. Differentiation between contact and atopic dermatitis is generally possible in adults; in infants it is usually found to be difficult.

DR. J. VICTOR GREENEBAUM, Cincinnati: I noticed that Dr. Hill had 127 cases of this condition. Judging from our experience in Cincinnati, this is indeed an unusually large number of cases. That reminds me of a story that probably is familiar to many. A young doctor years ago, on being asked the specialty in which he intended to enter, answered "infantile eczema." On being asked the reason for this unusual decision, he answered: "First, because there are so many of these cases; second, these cases never get well; third, these cases never die, and, fourth, these cases never bother you at night." I hope this young man did not come to Cincinnati, because, first, there are rather few cases in Cincinnati; second, the patients frequently get well; third, they sometimes die, particularly if they are sent to the hospital, as brought out by Dr. Schwartz in his report, and fourth, I know from experience that they do bother you at night. In Dr. Hill's summary, he stated he would give results of his group, but I noticed he said he could not draw any conclusion from the results and therefore would not present them. In ten years' time at the Cincinnati General Hospital, we have had sixty-one cases listed under the diagnosis of eczema in the pediatric service. Seventeen of these cases had to be discarded as improperly diagnosed, leaving forty-four cases of undoubted eczema. Of these cases, twenty-six entered the hospital for treatment of eczema. Incidentally complications, chiefly of the respiratory tract, developed in twenty-one of these twenty-six. Skin tests were made in six cases. The dietary changes based on the skin tests were made, resulting in four patients improved, one unimproved and one recovered. Of the remainder, eighteen recovered, twenty-four improved, one died and one case was intractable. All sorts of treatment were used, including tar and mercury. It can be seen from these results that 36 per cent of these babies recovered and 59 per cent improved, giving a total of 95 per cent showing favorable outcome. I have gone over the cases during the past five to six years in the Jewish Hospital, in the Cincinnati General Hospital outpatient clinic, the Children's Hospital, and the Children's Hospital outpatient department, and they total to the surprisingly low number of approximately seventy.

DR. GEORGE PINESS, Los Angeles: Dr. Hill's paper gives one the impression that the etiology in chronic atopic eczema is most difficult to determine, therefore not warranting the time and effort that are put forth in testing these cases. One is justified in this opinion if he takes the attitude that foods alone cause this disease in children. This is the impression of most pediatricians. In the experience with the clinic of the Children's Hospital in Los Angeles, over a period of eleven years I found that there were as many children that were sensitive to things other than foods, resulting in eczemas. Shortly after a child is born he is in contact with as many things as are adults and one should study him as an adult instead of as an infant. Reactions in children are rarely limited to food alone. In a review of 1,500-odd allergic infants at this clinic it was found that foods, and foods alone, were present in only one out of each hundred cases studied; in other words, foods as an etiologic factor alone are present in 1 per cent of the total cases studied. Incidentally, it was found that the other 99 per cent of positive cases were multiple sensitive,

the incidence of foods being present in about 70 per cent, about 19 per cent being environmental factors, and the remainder being those of pollen and the like. I agree with Dr. Greenebaum that deaths occur from eczema, particularly in those children brought to the hospital. They seem to be in good physical condition but suddenly have severe diarrheas, become dehydrated, then after a short period with a high fever, die.

DR. CHARLES HENDEE SMITH, New York: There is no problem that is so trying to the pediatrician as the case of chronic eczema. A more or less standard procedure has been adopted in the department where I see these cases. In the first place, we find rather more of them due to diet than was suggested by the last speaker. We therefore put each infant with eczema on a diet of evaporated milk, appropriately diluted, which has been boiled four hours. This follows the suggestion of a clinician with long experience, Dr. Charles Gilmore Kerley. Ratner, in our department, has found by animal experimentation that evaporated milk boiled four hours is the least anaphylactic agent of the various types of milk. To this we add boiled rice. It is possible to keep a child on boiled evaporated milk formulas and rice for a long time, with the addition of some fresh fruit or vegetable juice. Other foods are added slowly. Appropriate local treatment must not be forgotten. The old principle of soothing the acute cases and stimulating the chronic ones holds as much today as ever. I notice that most of the speakers today have dismissed the local treatment as if it were all a matter of ointments. In the acute, oozing stages we use a simple zinc and starch paste, 25 per cent each in petrolatum. The starch lets the secretion through from the inside. It must be remembered that this is not Lassar's paste, which contains 2 per cent of salicylic acid, an irritating substance. The zinc and starch paste is used on a mask or dressing until the oozing has ceased. After this and before stimulation is needed, we have devised a drying paste of considerable value; namely, a zinc paste with K-Y jelly base. When this jelly dries it leaves an elastic coating which protects the skin from the air. We use 2 drachms (8 Gm.) of zinc oxide, 2 drachms of calamine, 2 drachms of magnesia magma and one tube of K-Y jelly. If mixed thoroughly, it can be applied in a thin smooth layer which needs no dressing. It gives a great deal of relief from the itching, which is due to the microscopic cracking of the skin, allowing access of air. It is excellent for poison ivy as well for the same reason. Coal tar is not the answer for stimulating all chronic cases. It burns some skins like liquid fire. This rarely occurs with good old oil of cade.

DR. LEWIS H. HILL, Boston: If I were restricted to one routine food for use in infantile eczema, I should probably choose evaporated milk. I should not care to boil it, because it has already been heated to 240 Fahrenheit. There is this, however, about evaporated milk and the other superheated milks: Lactalbumin is very considerably denatured in the process of heating, if the milk is heated very hot. Casein is probably not changed by heating, no matter how long it is heated. In most cases of milk sensitivity in infants and children, the sensitivity is to casein as well as to lactalbumin, so, therefore, if there is a double sensitivity, evaporated milk or boiled milk or superheated milk is likely to do no good. If the sensitivity is to lactalbumin alone as determined by the skin test, evaporated milk or boiled milk or superheated milk may be very valuable. I have had prepared for me a preparation of milk that has been heated to 130 C. for an hour, much hotter than evaporated milk, is heated. I am able, with that preparation, to get very large positive skin tests in most babies who show casein sensitivity.

**Sunlight and Vitamin D.**—Vitamin D differs from most of the other known vitamins in the relative paucity of its distribution in common foods, egg yolk and butter being the only sources which contain it in fair abundance, unless such substances as cod liver oil are included as common foods. This fact seems to indicate that man is expected to derive his necessary supply of this vitamin from exposure of his body to sunlight.—Colwell, S. J.: Vitamins in Clinical Medicine, *Practitioner* **132**:15 (Jan.) 1934.

# USE OF RECONSTRUCTIVE SURGERY IN CERTAIN TYPES OF DEFORMITIES OF THE FACE

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AND
FREDERICK A. FIGI, M.D.
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A large number of deformities, for correction of which reconstructive surgery is required, are seen primarily by laryngologists. Consequently, we are considering some applications of the principles of this type of surgery for certain types of deformities of the face that are of especial interest to laryngologists.

There are certain general principles in reconstructive surgery that are the same whether applied to this field or to others. Some of these principles are applied in the making of a tubed flap, a delayed flap, a full-thickness skin graft or a Thiersch graft, or in the grafting of bone or cartilage. However, in operations about the face certain problems require additional consideration, owing to local anatomic, functional and cosmetic requirements. No field of surgery requires more careful preoperative study, exacting surgical technic, care in handling tissues, and close postoperative observation.

Of the many deformities that occur about the face, we have selected for consideration four types that should be of interest to the laryngologist. These have no special relation to one another, aside from the fact that they present current problems in reconstructive surgery: (1) some nasal deformities that may be corrected by adjustment of the cartilages; (2) syphilitic nasal deformities; (3) deformities secondary to the removal of intranasal and antral tumors, and (4) deformities of the forehead, the result of osteomyelitis or the removal of tumors involving the frontal sinuses.

## SOME NASAL DEFORMITIES THAT MAY BE CORRECTED BY ADJUSTMENT OF THE CARTILAGES

A great deal has been written about the use of cartilage or bone to correct various deformities of the nose, but not sufficient attention has been given to reshaping and adjustment of the nasal cartilages in the correction of certain types of these deformities. This is particularly true of the deformities that follow operation for harelip of adults. Metzenbaum [1] has presented an excellent piece of work, showing the anatomic displacement of the nasal framework that results from dislocation of the lower end of the septum.

In the deformity resulting from operation for harelip of adults, the median line of the nose frequently is displaced laterally, both the basal bones and the cartilage. The greater alar cartilage, on the flattened side, is displaced backward, the ala is flattened and flared outward, and its lower margin has a marked convexity similar to the turned down brim of a felt hat. The vestibule of the nose lies with its long axis laterally, or obliquely, instead of anteroposteriorly (fig. 1).

Correction of this type of deformity requires chiseling free of the nasal bones and setting them over into correct alinement, rotating and bringing forward the

From the Section on Laryngology, Oral and Plastic Surgery, the Mayo Clinic.

Read before the Section on Laryngology, Otology and Rhinology at the Eighty-Fifth Annual Session of the American Medical Association, Cleveland, June 13, 1934.

1. Metzenbaum, Myron: Asymmetry of the Nares, Arch. Otolaryngol. **16**: 690-697 (Nov.) 1932.

greater alar cartilage, and rolling in the posterior part of the ala. It is advisable to cross-hatch the cartilage posteriorly to eliminate the spring and, following this, to hold the nose in position by means of lead plates and tension sutures. The convex lower margin of the ala must be made like its fellow. It is sometimes necessary to skin-graft the sulcus after freeing up underneath

Fig. 1.—*A*, deformity after operation for harelip. The following may be noted: displacement of the nasal bones and tip of the nose, flattening of the left ala, the short upper lip, and irregularity of the vermilion margin. *B*, postoperative appearance. Correction of the deformity of the nose and upper lip has been effected.

the lip in order to allow insertion of a plate to hold the nose and upper lip forward. A much more marked deformity is present after operation for double harelip of adults; features of this deformity are the wide nose with rounding of the tip, the short columella and frequently the bilateral flaring of the alar cartilages. Elevation of the tip of the nose, lengthening of the columella at the expense of the upper lip, and narrowing of the entire lower cartilaginous part of the nose are necessary. Sometimes excision of an elliptic piece of cartilage from the median line is required in order to narrow it sufficiently. The cartilages forming the flattened, wide tip may be unfolded, brought forward and sutured in place with chromic catgut to form a more normal looking tip. The ala on either side should be rolled in posteriorly after cross-hatching (fig. 2) has been done.

Dermoids of the nose require careful excision and adjustment of the cartilages, because of the situation of the sinus between the nasal bones. Widening of the nose in some cases may require chiseling free of the nasal bones and adjustment of the superior and lateral cartilages to build up the bridge after excision of the cyst.

### SYPHILITIC NASAL DEFORMITIES

Syphilis that causes nasal deformities may be of congenital or acquired type. The outstanding feature of this type of deformity is loss of the bony structure and cartilaginous and mucous membrane lining the nose, producing a change that may vary from a slight saddleback deformity to a crumpled mass of skin and tissue, with loss of the columella.

In the congenital type there may be flattening of the face, producing a saucer-shaped deformity, with a very small nubbin of cartilaginous nose, with flattening of the bridge. Replacement of the lining of the nose, either by means of a full-thickness skin graft or a pedicled flap, is necessary in most cases in order to reconstruct the nose. Gillies suggested the use of Thiersch grafts on dental compound attached to a splint fixed to the teeth to replace the lining, after the skin of the nose had been freed. We have used a similar procedure, employing a full-thickness skin graft, with satisfactory results (fig. 3). This produces two thicknesses of skin between which costal cartilage may be inserted to correct the saddleback deformity. In some cases a post may be necessary in addition, in order to raise the tip of the nose. A removable appliance consisting of a vulcanite tip on a stiff wire, attached to the upper teeth, may be necessary to hold the tip forward in position in certain cases (fig. 4). If a pedicled flap is used to replace the lining, this is usually best taken from the upper part of the arm, and, after delay, it is brought up into position, carried in back of the nose, either underneath the upper lip or through the base of the columella, and held with mattress sutures, the arm being fixed to the head by means of a cast or other suitable device. In congenital deformities reconstruction of the columella is most satisfactorily done by elevating a flap from the center of the upper lip, the base of the flap being where the base of the columella should be, and the distal end of the flap extending down to the vermilion border. The undersurface of the flap is lined with a full-thickness skin graft at the time of the original elevation and then sutured back in place on the upper lip. In ten days the flap is elevated again; the distal end is brought up to a point just behind the tip of the nose, and the wound in the upper lip is closed. The skin graft forms the antero-inferior surface of the columella. Certain congenital nasal deformities require only a cartilage implant to correct the deformity, while others are so marked, with loss of tissue, that total rhinoplasty offers the best solution, a line forehead flap being used. The use of horseshoe-shaped pieces of

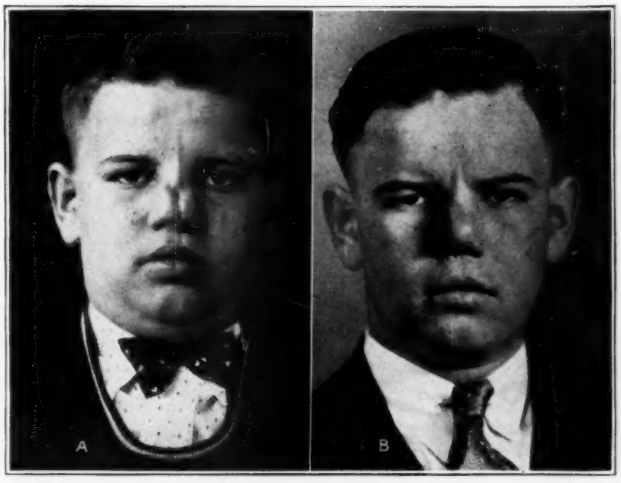

Fig. 2.—Nasal deformity, the result of a dermoid cyst: *A*, displacement of the nasal cartilages may be noted. *B*, following removal of the dermoid cyst and adjustment of the nasal cartilages.

cartilage to stiffen the columella and alae, as suggested by Webster,[2] is a distinct advance in total rhinoplasty.

### DEFORMITIES SECONDARY TO REMOVAL OF NASAL AND ANTRAL TUMORS

A very small percentage of patients require reconstructive surgery to replace a portion of the nose or

2. Webster, J. P.: Personal communication to the authors.

cheek following lateral rhinotomy or destruction of a malignant antral tumor by diathermy and radium. They usually present an opening laterally in the nose and cheek, or a deformity, with loss of tissue and perforation through the anterior wall of the antrum. In a small percentage of cases the eye is lost. A lined pedicled flap from the thorax or back is the best method of replacing this tissue. If the patient is a woman the forehead may be used. The area from which the tissue to replace the deformity is obtained should be carefully selected, so that the character of the skin simulates the skin of the face. The skin in the region of the clavicle is usually suitable for this purpose. The tubed flap is elevated, extending from the clavicle down over the thorax, and then the lower end is carried to the mastoid region. The upper end of the tubed flap in the region of the clavicle, which is lined with a full-thickness skin graft, is carried to the face to replace the lost tissue. The lining should be supplied in all these cases. This may be turned in from surrounding tissues of the cheek or supplied by means of a full-thickness skin graft, lining that portion of the flap that will be used in the cheek.

Fig. 3.—Syphilitic nasal deformity, with loss of the lining of the nose. A full-thickness skin graft on a Stent's compound splint attached to the upper teeth and carried up into the nose through an incision underneath the upper lip was used to replace the lining of the nose, after the nose had been freed up and the scar tissue excised from the inside. A cartilage implant was inserted later, between the skin and the full-thickness skin graft lining of the nose. *A*, before reconstructive operation; *B*, postoperative appearance.

In most deformities following removal of malignant tumors of the antrum, with loss of the eye, there is so much deformity that an attempt to reconstruct the socket so that an artificial eye can be worn is usually not satisfactory. Covering of the orbit and cheek at the same time usually is the best method. If there is sufficient scarring inside the mouth, due to loss of tissue of the cheek, to cause ankylosis of the lower jaw, replacement of this tissue by means of a tubed flap from the thorax is advisable. The flap is brought up so that its distal end is carried into the mouth and sutured in place to cover the raw surface remaining after excision of the scar tissue. The mouth is kept open temporarily by means of a rubber gag. Large openings into the antrum, through the palate and upper jaw, are much better closed by means of a vulcanite plate; not only does this close the opening but teeth may also be attached to it. Kazanjian [3] states that, as a rule, if a flap is used to close large openings in the palate, it is impossible to hold a denture in position. A dental plate is much more satisfactory, for it closes the opening and also supplies the lost teeth.

3. Kazanjian, V. H.: Personal communication to the authors.

### DEFORMITIES OF THE FOREHEAD, THE RESULT OF OSTEOMYELITIS OR REMOVAL OF TUMORS INVOLVING THE FRONTAL SINUSES

Replacement of the soft tissues of the forehead may require full-thickness skin grafts, pedicled flaps or

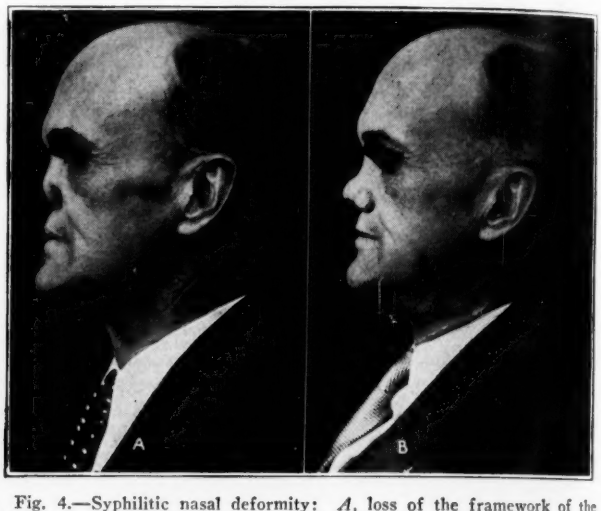


Fig. 4.—Syphilitic nasal deformity: *A*, loss of the framework of the lower two thirds of the nose, and flattening of the face may be noted. The lining of the nose was replaced by means of a pedicled flap from the upper arm. The flap was also used to reconstruct the floor of the nose and to bring forward the upper lip. *B*, postoperative appearance.

tubed flaps; the latter are used when tissue is brought from a distance. Full-thickness skin grafts are used in clean wounds in which the bone is not involved.

Fig. 5.—*A*, postoperative deformity of the nose, antrum and ethmoid region, two years and seven months following removal by surgical diathermy and radium, of an epithelioma of low grade. The tumor had bulged this region so that it was necessary to remove the bone at this point. *B*, postoperative appearance. A double-epithelized tubed flap was brought up from the back to replace the lost tissue.

The technic of cutting and suturing them in place, with careful hemostasis and application of even pressure, must be followed to insure a large percentage of takes.

If an area of exposed bone, the result of osteomyelitis following irradiation or removal of a tumor, is present, it is advisable to remove the entire sequestrum with

chisel and bone forceps. To cover this area a delayed pedicled flap composed of skin from the nearby forehead or scalp is most satisfactory; the area from which the flap is taken is covered with a full-thickness skin graft at the time the flap is placed in position (fig. 5). A temporary covering of an area of the forehead from which the periosteum has been removed in a clean wound, due to removal of a tumor, by a bipedicled flap with a pedicle in either temporal region saves a great deal of time. A bipedicled flap is brought down from the scalp to the forehead as a visor and after being left in position ten days the flap is dissected free again and replaced on the scalp in its original position, leaving sufficient tissue over the forehead from the under surface of the flap to allow covering it with a full-thickness skin graft. The larger areas of the forehead in which bone has been denuded, and those in which the frontal sinuses have been opened, require tubed flaps which may be brought up satisfactorily from the back or thorax in stages.

## ABSTRACT OF DISCUSSION

DR. SAMUEL IGLAUER, Cincinnati: As pointed out by the authors, the general principles of plastic surgery apply to reconstructive surgery of the face. However, greater care must be taken in approximating the skin edges, and the stitches should be removed as early as possible and replaced by collodion cover straps of gauze to hold the edges in apposition. When flaps are used it is important to have the skin of the flap match that of the face in color and texture. Forehead flaps match better than skin from other parts of the body. The secondary contraction resulting from operative incisions is to be anticipated. Alar deformities remaining after a good harelip operation frequently require correction. The flattened ala should be approximated to the septum and, as pointed out by Blair, a wide undermining of the cheek about the ala tends to prevent the recurrence of the deformity. In the correction of the saddle nose deformity in which a lining and a covering flap are used, it is important to have the covers sufficiently loose to permit of the easy introduction of a cartilaginous implant between the flaps. In common with Drs. New and Figi I consider costal cartilage the best substance for implantation. I should like to inquire whether the authors consider antisyphilitic treatment of any special value in congenital syphilis before undertaking a plastic operation on the nose. For certain depressed deformities of the cheek, the implantation of fat is desirable. In two cases of facial hemiatrophy, by making an incision in front of the ear and the hair line and then depositing the fat under the skin into the depression, a very good cosmetic result was obtained. The fat implant should be somewhat oversized, as it is subject to shrinkage. The deformities of the face after surgery for malignant disease are very distressing but still are of minor importance in comparison with the original malady. Closure or covering of such defects for cosmetic reasons should not be undertaken until it is certain that there is no recurrence of the malignant condition.

DR. FIELDING O. LEWIS, Philadelphia: The authors are to be congratulated on their splendid results. It has been my experience that plastic surgery about the nose and face is very difficult and that satisfactory cosmetic results are hard to obtain, no matter how simple the defect may be. This method of correcting nasal deformities resulting from imperfect harelip operations and from accidental happenings merits special emphasis. I know of no nasal deformity comparable to them in which such a uniformity of bad results can be obtained. Nasal deformities due to syphilis often tax the ingenuity of the surgeon. When the bony and cartilaginous framework have been largely destroyed, the remaining skin is usually so crumpled and distorted by scar tissue that complete rhinoplasty offers the best solution. In syphilitic subjects, one should always bear in mind to make ample allowance for the shrinkage in skin flaps, for it has always seemed to me that there is much more contraction of the skin in syphilitic patients than in others. Deformities resulting from operations for malignant disease involving the face, sinuses or a portion of the nose require meticulous care. These patients have usually been treated, in addition to surgery, with maximum doses of x-rays or radium or both. As a result there is an extensive fibrosis of the skin, which, owing to the lack of blood supply, greatly hinders and ofttimes completely defeats the taking of the skin flaps. If one is not able to go beyond the area of fibrosis, prosthetic repair is preferable. In cases in which there has been enucleation of the eye, together with antral and other sinus operations, my experience would lead me to advise caution against any hasty attempt at plastic repair, for usually, if one delays, much time and hard labor are saved by the appearance of recurrences, which almost invariably take place.

DR. GEORGE B. JOBSON, Franklin, Pa.: About thirty years ago I began the practice of plastic surgery of the face and mouth in conjunction with our specialty. At that time, only a very few were giving this branch attention, and the methods then were somewhat crude as compared with those of today. During the World War great advances were made, and the improvements instituted then are being used in civil life today by many operators. I wish to present a method for the correction of a cauliflower ear, which has proved successful in several cases. The condition is the result of hematoma auris, which becomes organized into cartilage and scar tissue. Correction is accomplished by making an incision just internal and parallel to the rim of the ear. The skin is carefully dissected from the inner and outer ear surfaces, to the side of the head, if necessary. The auricular skeleton is then sculptured into shape by scissors and scalpel. If absences of continuity of the rim exist, these may be corrected by stitching in pieces of the removed ear cartilages with absorbable catgut. The skin flaps should have several small incisions made in them for drainage; then they are drawn over the modeled ear skeleton and their edges united with interrupted sutures. Half a dozen mattress sutures may be passed through both layers of skin and the cartilage in the depressions to facilitate union. Pieces of small rubber tubing or rubber tissue should be placed beneath the loops of the stitches to prevent cutting. Even pressure must be maintained by filling all irregularities with pieces of cotton wet with saline solution and allowing them to remain until healing takes place. A gauze pad and bandage are applied.

DR. CLAIRE L. STRAITH, Detroit: The authors have brought out beautifully many of the essential things required in producing satisfactory results cosmetically, at least, in facial deformities. In a nose, usually in a total loss, at least, it is the lining, covering and lastly the support, which is introduced later, usually of cartilage, that have to be restored. I wish to confine my remarks to the covering, or the integument used. As has been mentioned, the Indian method, or bringing down a forehead flap, works beautifully in women, but men unavoidably have to go through life with a forehead scar, no matter how nice a scar is produced, by bringing the flap back and then grafting this forehead. For two years I have been using the skin just beneath the ear, which, in men, is practically free from hair, matches the face beautifully, and is easily brought into place with one transfer. So far as I know, this method hasn't been reported before. I first used it in a boy, who, as a baby, was leaning with his nose against a window pane when some one broke the glass. The glass slid down, cutting off the integument over the bridge of the nose and the tip and columella. At the first operation I raised a flap from the skin beneath the ear to the sternoclavicular notch, bringing the edges together to form a tube pedicle. Three weeks later the scar tissue over the bridge of the nose and surrounding the wound was turned in, wrong side out, to produce a lining. The pedicle was detached at its upper end, following the pattern of the new nose and the skin stitched onto the nose in the new position. I put his head in a cast with a connecting band to the chest cast to maintain this position for the next two weeks. The skin was then detached and shaped around the tip of the nose. After this operation, a nice result can be obtained. The procedure provides a graft with one transfer, which matches perfectly the skin of the face, is

practically free from hair, and does not leave a disfiguring scar. It is much better than the Italian method of bringing up the arm skin, because the Italian method produces a skin covering that does not match the face.

DR. MYRON METZENBAUM, Cleveland: Three things necessitate reconstruction of the cartilaginous or lower half of the nose. The upper bony half of the nose has an outside bony framework, which is self supporting, and a bony septum. The entire lower half of the nose has a cartilaginous framework and an entire cartilaginous septum, which is the only supporting structure to the lower half of the nose. When the cartilaginous septum is weakened or dislocated, the lower half of the nose may droop or drop to such a degree as to necessitate some type of reconstructive surgery to reestablish normal nasal function. The most frequent injuries to the lower half of the nose are those which occur from infancy to about the age of 10 years. One of the serious results of injuries to the cartilaginous septum is due to hematoma, which is usually bilateral because the same force affects the covering of the septum on the two sides. There is frequently a fracture of the cartilage, allowing the blood to seep through from one side to the other. A hematoma should be opened by a wide incision on both sides, the clots removed and the perichondrium packed close to the cartilage on both sides. If suppuration takes place, the cartilage, especially in young children, will be weaker or large areas will be rapidly destroyed. Secondly, nasal reconstruction of the tip of the nose later in life may be necessitated by injuries to the tip of the nose causing fractures and dislocations resulting in nasal obstruction. Displacements of the lower end of the cartilaginous nasal septum may be recognized by the asymmetry of the nares. Replacement of the dislocated septal cartilage should be done for the same reason that the supporting structures in any other part of the body, when displaced, are replaced to reestablish normal function. Thirdly, the results of the submucous resection operation may necessitate reconstruction of the supporting tip of the nose. The cartilage has no circulation of its own and receives its nourishment from the perichondrium on both sides. When the submucous resection is performed, the perichondrium, if stripped from the entire cartilaginous septum, may cause the remaining cartilage to become like a piece of blotting paper that has been dampened and ever after lacks the ability to support the tip of the nose. Normal nasal function depends on the perpendicularity of the lower end of the cartilaginous septum.

DR. GORDON B. NEW, Rochester, Minn.: Regarding Dr. Metzenbaum's work, I would say that it was mentioned in the paper and that Dr. Figi and I believe it to be an advance in its particular field. Dr. Straith spoke of the color and texture of the flap in rhinoplasty and advocated using the neck for this purpose. I believe that, for women whose foreheads may be covered by their hair and for men with thin skins on whom full-thickness skin grafts seem to show but little, the forehead should be used for total rhinoplasty. The use of artificial appliances for temporarily replacing the loss of a nose has a definite place, although total rhinoplasty should be done, as most patients are not satisfied to wear any type of artificial nose except as a temporary measure. Dr. Lewis's discussion regarding the time to do these plastic operations is important. I wait at least a year following removal of a malignant growth before attempting reconstructive surgery. For deformities about the face, when a considerable amount of irradiation has been given and a large area is to be replaced, the tissue is best brought from a distance, a tube flap being used. As a rule, the blood supply about the area is destroyed and it is difficult to get a flap about the area that is satisfactory. Regarding operation on patients with congenital syphilis, I would say that in the past most of the Wassermann tests have been negative. As a results of the recent development of more sensitive tests, serologic examinations are more likely to be positive. Such patients should have preoperative antisyphilitic treatment. Regarding Dr. Iglauer's question as to an external method of holding wounds together following operation, there is an English mixture called "mastosol" which we paint on the skin and apply tape to this. I find it much better than adhesive tape for this purpose.

## NUTRITIONAL XEROPHTHALMIA

J. A. THORSON, M.D.
DUBUQUE, IOWA

Early Egyptian literature and the teachings of Hippocrates are quoted as prescribing a liver diet for hemeralopia, one of the symptoms of avitaminosis. By recent experiment,[1] this therapy has been proved scientifically correct. In 1857 Livingstone,[2] describing a disorder of the eyes in members of his African party, wrote that the eyes became affected, as in the case of experimental animals fed on pure gluten or starch; yet it was not until fifty-five years later that Hopkins[3] first gave definite proof of the existence of fat-soluble vitamin A. In the following year, 1913, Osborne and Mendel[4] experimentally produced characteristic xerophthalmia and proved that it could be cured, in rats, by the addition of butter fat or cod liver oil to the deficient diet. From this time until 1922, when McCollum and his associates[5] differentiated vitamins A and D, many of the abnormalities reported following clinical observation and experimental studies, thought to be due solely to vitamin A deficiency, were really due to a deficiency of vitamins A or D or both.

As with similar food factors, the absence of vitamin A is most effective in infants and children or during the period of growth. Reports of large epidemics among an entire populace, such as those in Russia (1887) during lenten fasts, in Japan (1896) and in Denmark (1917), are, in effect, reports of children's diseases. It was not the fasting Russian mothers but their nurslings in whom keratomalacia developed. Adults, however, are not immune and will succumb if the food deficiency is severe enough. The poorly fed soldiers of northern China have been an actual laboratory for the study of avitaminotic ophthalmia.

The relatively high degree of tolerance to dietary deficiency disease in adults explains the rare incidence in mature life. Since the discovery of vitamin A, four cases of xerophthalmia in adults have been reported in the United States. Crohn and Rosenberg[6] in 1924 observed two cases of inflammation of the conjunctiva and cornea in patients with colitis, who were on a restricted diet. The eye condition did not respond to local treatment but cleared up readily when the patients were given a sufficient diet. Two years later Wohl[7] reported a case of beriberi and xerophthalmia in a school teacher, aged 32, who had had severe diabetes for six years. The dull, dry and opaque corneas quickly responded to a proper diet and insulin.

Davis,[8] in 1932, reported the case of a widow, aged 65, who had lived in a village hotel for eighteen months prior to his observation. She had spent two months in bed. The corneas were opaque, stippled and lusterless.

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2. Livingstone, David: Travels and Researches in South Africa, London, 1905, p. 470.
3. Hopkins, Gowland: Feeding Experiments Illustrating the Importance of Accessory Factors in Normal Dietaries, J. Physiol. **44:** 425, 1912.
4. Osborne, T. B., and Mendel, L. B.: The Influence of Butter Fat on Growth, J. Biol. Chem. **16:** 423, 1913; The Influence of Cod Liver Oil and Some Other Fats on Growth, ibid. **17:** 401, 1914.
5. McCollum, E. V.: Simmonds, Nina; Becker, J. E., and Shipley, P. G.: An Experimental Demonstration of the Existence of a Vitamin Which Promotes Calcium Deposition, Bull. Johns Hopkins Hosp. **33:** 229 (June) 1922.
6. Crohn, B. B., and Rosenberg, Herman: Medical Treatment of Chronic Ulcerative Colitis, J. A. M. A. **83:** 326 (Aug. 2) 1924.
7. Wohl, M. G.: Avitaminosis in Course of Diabetes, J. A. M. A. **87:** 901 (Sept. 18) 1926.
8. Davis, W. T.: Xerophthalmia: Report of Case, J. A. M. A. **98:** 1640 (May 7) 1932.

Vision was limited to counting fingers at a distance of 2 feet. At the end of three weeks, during which her diet was rich in green vegetables, butter fat and viosterol, she recovered completely with a corrected vision of 20/30.

The susceptibility of childhood, the scourge of chronic illness and the ravages of famine, as has been noted, are the usual precursors of xerophthalmia. These conditions were strikingly absent in the case to be reported. The patient had no other ailments and lived in the "land of plenty." His very occupation was the raising of food which is the chief source of vitamin A.

Fig. 1.—The left eye at the time of the first examination. The marked inflammatory changes of the conjunctiva are shown.

## REPORT OF CASE

A. B., a farmer, white, aged 53, unmarried, was brought in by a neighbor on account of rapidly failing vision. Since 1928 he had been troubled every winter with swelling of the eyelids, pain in the eyeballs, tearing, photophobia and yellowish discharge. This condition would clear in the spring.

Since the death of his mother in 1924, he had lived alone. His diet consisted of potatoes, bread, oatmeal, sugar, thoroughly cooked meats including beef, pork and pork sausage; oranges, radishes and cabbage in season; he would eat eggs in the spring until June, but did not use them thereafter because of doubtful freshness; he used no milk, cream or butter, and drank black coffee.

The patient entered a hospital in February 1929 with diminished vision, tearing, photophobia and a "rough feeling" in the eyes. The diagnosis was kerato-iritis with the possibility of malacia. He was given the regular hospital diet. Local treatment included drops of 1 per cent atropine solution and hot applications for twenty minutes followed by instillation of 1:5,000 mercurial ointment every three hours during the day. At this time smears and cultures from the conjunctival sacs showed staphylococci in predominance. A tuberculin test and three Wassermann reactions, one after a provocative dose of neoarsphenamine, were negative. The urinalysis was negative; the white blood cell count was 6,300. The patient made a complete recovery in one month. He was told to add oranges and fresh vegetables to his diet.

During the winter of 1931-1932 he consulted an oculist because of a return of the symptoms. At this time the corrected vision of the right eye was 20/200, and that of the left eye 20/25. Most of the depression of vision in the right eye was due to scarring. No definite diagnosis was made. He was given zinc collyria and mercurial ointment for local treatment and asked to return in one week. He did not return.

He came for relief of the present attack Feb. 6, 1934. About the time of the preceding Thanksgiving the eye began to pain and the lids became swollen; one month later vision began to fail and became gradually worse. Ocular pain increased until one week before admission, when it ceased entirely. He was now unable to see to do his usual work. He was losing strength and felt unsteady on his feet.

On physical examination he was mentally slow and unsteady on his feet, but there were no abnormal neurologic signs. He was fairly well nourished; the hair and skin were dry. A papular eruption was present on the forehead, neck and back. The few remaining teeth and surrounding gums were markedly infected. He had several whitish plaques on the inner surface of the lower lip. The mouth, nose and pharynx were dry and showed a slight grayish pallor. No abnormality of heart, lungs, abdomen or extremities was noted.

The most striking feature of the right eye was the peculiar dryness of the cornea; it was opaque and lusterless; the lid margins were moderately swollen and the lashes were covered with a dried greenish yellow exudate. There was congestion and thickening of the lid and bulbar conjunctivae, more marked around the limbus and over the lower lid. Pigmentation was not found anywhere in the conjunctival sac. When fluid was dropped on the eyeball it was shed as though the surface had been oiled. The normal sensitivity of the cornea was absent, the surface was irregular and there were eight superficial vessels extending from all around the limbus to the center. A lace of smaller superficial capillaries encircled the limbus like a fringe 1 to 1.5 mm. wide. The anterior chamber was of average depth; only the color of the iris was distinguishable. The pupil was 2.5 mm. wide and was half filled with a central clump of pigment. It was not dilated by a 1 per cent solution of atropine. A fundus reflex was not obtained. The vision was limited to counting fingers at 10 inches.

The most striking feature of the left eye was the thick, beefy red appearance of the bulbar conjunctiva. The lid margins were swollen and covered with a yellow exudate; the lid conjunctiva was red and thickened. The conjunctival swelling was so pronounced at the limbus that it was level with the corneal surface. The cornea was insensitive. At the nasal side was an ulcerated area 3 mm. by 4 mm., through which Descemet's membrane was bulging; the remaining surface was irregular and lusterless. A fringe of capillaries 1.5 mm. wide encircled the limbus. The lower third of the anterior chamber was filled with pus. The hazy outline of the pupil measured 2.5 mm. in diameter and only the color of the iris could be defined. No fundus reflex was obtainable. The vision was limited to hand movements at 1 foot.

Fig. 2.—The left eye at the time of the second examination. The improvement after treatment is shown.

At the time of admission the temperature was 98.4 F.; the white blood cells numbered 7,500; the differential count showed neutrophils 68 per cent, small lymphocytes 22 per cent, large lymphocytes 6 per cent, eosinophils 1 per cent, basophils 2 per cent and transitionals 1 per cent. The red blood cell count was 4,410,000; the hemoglobin was 85 per cent. There was an occasional hyaline cast in the urine. Staphylococci were predominant in the conjunctival smears. Examination of scrapings just external to the limbus revealed keratinization of the cells. The general treatment consisted of the regular hospital diet with the addition of 90 Gm. of butter, 24 ounces of 12 per cent milk, cereal with 4 ounces of 20 per cent cream and 2 ounces of a malt syrup containing 13,500 U. S. P. units of vitamin A per ounce daily. The local treatment included warm irrigations with a 1 to 6,000 solution of metaphen every three hours during the day, drops of 1 per cent atropine solution three times a day and 1 to 5,000 mercurial ointment instilled at bedtime; in addition, hot applications were given to the left eye for twenty minutes every three hours.

By the third hospital day the patient began to have pain in the left eye and the discharge from both had markedly increased; this marked the turning point. Two days later the discharge and pain had subsided and the corneas had regained their luster and their normal sensitivity. White sclera showed through at the periphery, and the swelling of the bulbar conjunctiva had receded so that the left cornea appeared nearly normal in relief. By the eighth day the hypopyon had completely disappeared and the ulcerated area was devoid only of epithelium. The whitish plaques in the mouth had disappeared.

During the following ten days the patient again became worse; the discharge increased and became more purulent; superficial ulceration was noted on the right cornea and the old area on the left eyeball again became active. Typhoid vaccine was given intravenously; the response was excellent. Within three days the corneal surfaces had healed and the associated ciliary injection had completely disappeared. A second dose of vaccine was given at this time and on the following day, February 27, all the patient's teeth were extracted. By March 1 the eyeballs were white and free of congestion; the corneal surfaces were intact. He left the hospital March 11, completely recovered but with considerable and permanent damage to the eyes.

### PERMANENT CONDITION OF EYES

The palpatory tension of the right eye was normal. The conjunctiva was normal except near the edge of the lower lid, where it was moderately thickened. All but a triangular segment of the corneal surface at its upper extremity, comprising one sixth of its area, was covered by a nebulous opacity. The surface was unbroken but very irregular and covered with many minute facets where the scarring was more pronounced. There were four superficial capillaries at equal intervals extending half way from the limbus to the center of the cornea. Under dilation with atropine the pupil was 3 by 4 mm. wide and the lower two thirds of its circumference was attached to the lens. It was filled with a meshwork of pigment and fine white strands of old exudate through the intervals of which a red reflex, but no fundus markings, could be defined. The vision was 20/100.

The tension of the left eye was normal. The upper tarsal conjunctiva was moderately scarred but smooth; the conjunctiva near the lower lid margin was moderately thickened. Two superficial capillaries, one above and one below, extending two thirds of the distance to the center, marked the temporal border of a flattened macular scar that covered three fifths of the nasal side of the cornea. The remaining two fifths was clear except near the limbus, where the surface was faintly mottled. Under dilation with atropine the pupil was 2.5 mm. wide. It was filled with a network of pigment interwoven with a thin layer of organized exudate. All but a 1 mm. segment, of the inferior temporal portion of the pupillary border was incarcerated in this curtain. This segment formed a rounded indentation 1 mm. wide in the iris margin, through which a bright red reflex was seen. A less brilliant reflex was obtained through other intervals in the pupillary network. No fundus markings could be defined. The vision was 20/100.

### COMMENT

Although hemerolopia is a frequent symptom in the ordinary, mild, chronic, adult type of xerophthalmia, it was not present at any time in this case. The disease ran a protracted course for six years, with a seasonal variation in severity. During the fall and winter months the patient consumed no vitamin A, while in the spring a few green vegetables and eggs became timely sight-savers. The effect of abundant sunlight, as proved by the ingenious experiments of Powers, Park and Simmonds,[9] must also have been an important seasonal therapeutic factor.

700 Locust Street.

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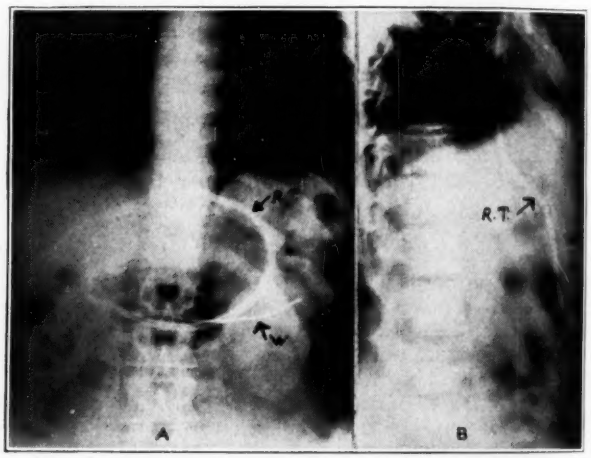
## *Clinical Notes, Suggestions and New Instruments*

### A METHOD OF ROENTGEN LOCALIZATION OF FOREIGN BODIES IN THE STOMACH PRIOR TO GASTROSCOPIC REMOVAL

GABRIEL TUCKER, M.D., PHILADELPHIA

The roentgen localization of foreign bodies in the stomach has offered considerable difficulty. When a foreign body is shown in the upper part of the abdomen, the proof as to whether it is in the stomach, the transverse colon or the small intestine




*A*, anteroposterior view showing rubber tube (*R. T.*) passing through the hiatal esophagus and curling round the greater curvature of the stomach, coming in contact with the piece of wire (*W*) in front of the spine. *B*, lateral view showing the rubber tube (*R. T.*) passing through the hiatal esophagus, coming in contact with the wire (*W*). The localization in both planes definitely shows the foreign body in the stomach and its relation to the hiatal esophagus. Roentgenograms by Drs. Pancoast and Pendergrass.

is sometimes quite difficult to obtain. The usual method is the preparation of films in the anteroposterior and lateral planes, which are of considerable value. The administration of an opaque mixture, which passes through the esophagus and immediately comes in contact with the foreign body, will usually give definite information. It is a disadvantage, however, if gastroscopic removal under fluoroscopic guidance is to be made, as it is necessary to wait for the opaque mixture to pass out of the stomach and upper part of the abdomen before fluoroscopic guidance can be satisfactorily given in many cases.

In a recent case in which there was a piece of wire supposed to be in the stomach, it was desired to localize it definitely and at the same time show its relation to the cardiac

9. Powers, G. F.; Park, E. A., and Simmonds, Nina: Influence of Radiant Energy upon Development of Xerophthalmia in Rats, J. Biol. Chem. **55**: 575 (April) 1923.

From the Bronchoscopic Clinic of the Hospital of the University of Pennsylvania.

end of the stomach and the hiatal esophagus. In order to do this the patient swallowed a rubber tube, which passed through the hiatal esophagus and cardia, coiling itself round the greater curvature of the stomach, giving its relation to the foreign body in the anteroposterior and lateral planes. The foreign body was definitely localized in the stomach and at the same time its relation to the hiatal esophagus was shown, as seen in the accompanying illustration. The tube was also used to empty the stomach before gastroscopy. If it was desired, air could also be insufflated into the stomach through the tube before its withdrawal.

### COMMENT

In a new method of localization of foreign body in the stomach, a rubber tube of the Levin or Weiss type feeding tube is passed and allowed to remain in position during the making of films, the patient being placed in the position required for gastroscopy. The advantages of this method are:

1. It shows the location of the foreign body with reference to the tube that is passed into the stomach.
2. The tube stays in the lower part of the esophagus and cardiac end of the stomach and gives a definite localization of the foreign body to the cardiac end of the stomach, where the gastroscope is to be introduced.
3. The rubber tube is withdrawn and gastroscopic removal can be proceeded with immediately.
4. The stomach contents can be aspirated and air introduced if desired before the tube is withdrawn.

236 South Nineteenth Street.

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## FATALITY RESULTING FROM THE USE OF LASH-LURE ON THE EYEBROW AND EYELASHES

S. B. FORBES, M.D., AND W. C. BLAKE, M.D., TAMPA, FLA.

During the past twelve months, instances of dermatoconjunctivitis due to the use of eyelash and eyebrow dyes have been reported by Greenbaum,[1] Harner,[2] Bourbon,[3] Jamieson,[4] McCally, Farmer and Loomis,[5] and Moran.[6] In the cases reported by the last two the reaction was severe enough to produce ulceration and necrosis of the cornea. Six of the reported cases were due to the use of the preparation "Lash-Lure," and two followed the use of "Godefroy French Hair Coloring"-Larieuse.

The case reported here followed immediately the use of "Lash-Lure" and terminated fatally.

### REPORT OF CASE

A woman, aged 52, who had considered herself in good health, had her right eyebrow "plucked" and the dye "Lash-Lure" applied to the right brow and eyelashes. This was done by her daughter, an employee of a beauty parlor. The adjacent tissues began to burn and swell within thirty seconds after the application of the dye. The pain was so severe that the operator decided not to treat the left eyebrow. Within a few hours the patient felt ill and the tissues around the eye were so swollen that she was unable to open her eye. The following day her temperature was said to be 104 and she consulted a physician who gave her a mixed streptococcus and staphylococcus vaccine and applied wet dressings of magnesium sulphate. The inflammatory reaction of the right side of the face extended and the temperature ranged between 102 and 104. Wet dressings of boric acid were used and ointment of yellow mercuric oxide was instilled in the conjunctival sac.

The patient was seen by us for the first time during the evening of March 13, 1934, eight days after the onset. On examination at 8 p. m., the patient appeared to be extremely ill. The temperature was 103.4, pulse 134, respiration 36. She was clear mentally and did not complain of pain, but she said that she felt completely exhausted. The skin over the right side of the forehead and cheek was red but not tense and glistening. The upper lid of the right eye was covered with a deep sloughing ulcer with much yellowish adherent exudate.

The palpebral conjunctiva of the upper and lower lids showed complete ulceration of a deep character. The conjunctival sac was filled with a yellowish, tenacious exudate that could be removed only with difficulty. As this exudate was removed, a bleeding base was left on the ulcerative areas on the inner surfaces of the lids.

There was some injection of the globe, and the ocular conjunctiva was slightly chemotic. The cornea was hazy in sort of a striped manner, but no real break could be made out after using fluorescein. The pupils were equal and reacted consensually to light and in accommodation. The eyegrounds were negative in the left eye. It was impossible to examine the fundus of the right eye. There was no apparent proptosis of the right eye. The preauricular glands were palpable. The lymph glands on the right side of the neck in the anterior region, particularly just below the mandible, were greatly enlarged, as is shown in figure 1. The nose, throat and teeth were normal.

**Fig. 1.—Appearance post mortem of large sloughing ulcer. The anterior cervical glandular enlargement is well shown.**

The area of cardiac dulness was within normal limits, sounds were clear and no murmurs were heard. The rhythm was normal, the rate 136, the blood pressure 114 systolic, 76 diastolic. Respiration was rapid and somewhat shallow. There was no odor of acetone. The percussion note was everywhere resonant, breath sounds were roughened, but no râles were heard on quiet breathing or following expiratory cough. The abdomen was entirely negative on palpation except for what appeared to be an ovarian cyst on the right side about the size of a grapefruit, which was not tender on pressure. There was no edema of the dependent parts or the extremities. All superficial and deep reflexes were moderately exaggerated. Kernig and Babinski's signs were negative and there was no neck rigidity. Aside from the face and neck the skin was clear, there being no evidence of petechiae, purpura or urticaria.

1. Greenbaum, S. S.: Dermatoconjunctivitis due to Lash-Lure, an Eyelash and Eyebrow Dye, J. A. M. A. **101:** 363 (July 29) 1933.
2. Harner, C. E.: Dermato-Ophthalmitis Due to the Eyelash Dye Lash-Lure, J. A. M. A. **101:** 1558 (Nov. 11) 1933.
3. Bourbon, O. P.: Severe Eye Symptoms Due to Dyeing the Eyelashes, J. A. M. A. **101:** 1559 (Nov. 11) 1933.
4. Jamieson, R. C.: Eyelash Dye (Lash-Lure) Dermatitis with Conjunctivitis, J. A. M. A. **101:** 1560 (Nov. 11) 1933.
5. McCally, A. W.; Farmer, A. G., and Loomis, E. C.: Corneal Ulceration Following Use of Lash-Lure, J. A. M. A. **101:** 1560 (Nov. 11) 1933.
6. Moran, C. T.: Bilateral Necrosis of the Cornea Following the Use of Hair Dye on the Eyebrows and Lashes, J. A. M. A. **102:** 286 (Jan. 27) 1934.

The lashes of the right eye were clipped and potassium permanganate irrigations and hot compresses were used. Atropine and mercuric oxycyanide instillations were also used. The patient failed to respond to general supportive measures such as digifolin and hypodermoclysis, and died at 11:30 p. m., just three hours after our first examination. No autopsy could be obtained.

COMMENT

It is with some hesitation that we report this case, owing to lack of laboratory data. A conjunctival culture was made, which showed a pure growth of Staphylococcus aureus. Blood counts and blood cultures were ordered, but the patient died before the specimens could be obtained.

The active principle in "Lash-Lure" is an aniline dye, the members of this group being capable of producing a violent allergic response in susceptible individuals. Plucking the eyebrow before application would furnish multiple portals of entry for the dye equivalent to multiple skin tests applied to a small area. There is no doubt that the patient's illness was brought about as a violent local and systemic allergic response. It is not clear, however, why this should have caused death eight days later unless a secondary septic invasion, probably some form of streptococcus, is assumed. The appearance in no way suggested erysipelas, and there was no evidence of cavernous sinus thrombosis or involvement of the nervous system.

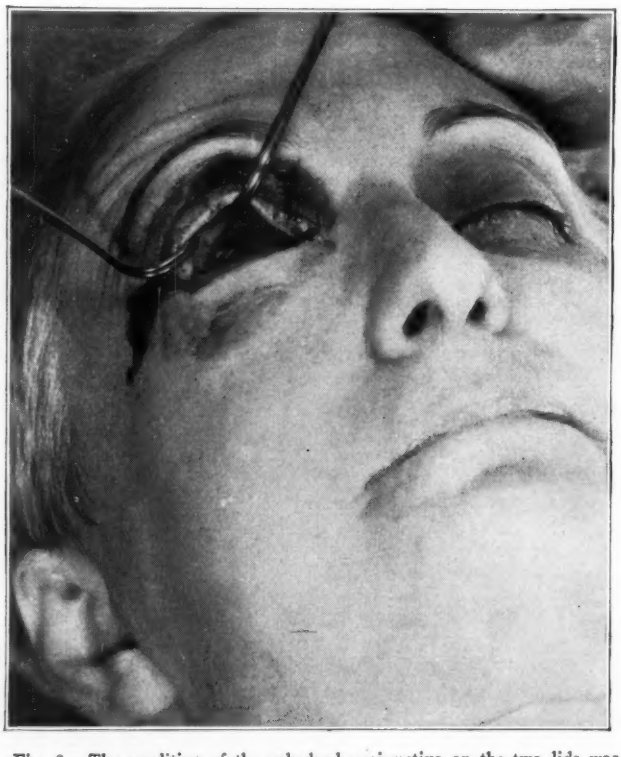

Fig. 2.—The condition of the palpebral conjunctiva on the two lids was the same. This shows only the sloughing ulcer on the under surface of the upper lid.

With the growing evidence to show the disastrous effects resulting from the application of "Lash-Lure" and similar aniline dye preparations in "beauty treatments," some way should be found to prevent their use.

Citizens Bank Building.

**Pathology of the Myopathies.**—The recent discovery of Sir Henry Dale that efferent stimuli in the vegetative nervous system produce their effect by the liberation of a chemical intermediary of the choline group, and that stimulation of the sympathetic in otherwise denervated skeletal muscle results in tonic contraction, seems to me to open up the possibilities of great advance in our very scant knowledge of the pathology of the myotonias, myasthenias and myopathies.—Collier, James: The Harveian Oration on "Inventions and the Outlook in Neurology," *Brit. M. J.* **2**:707 (Oct. 20) 1934.

# *Special Articles*

## DYSPNEA

CLINICAL LECTURE AT CLEVELAND SESSION

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MONTREAL

The science of clinical medicine rests on the knowledge of the causes of symptoms and signs and the interpretation of their functional significance. This holds equally valid whether applied to the diagnosis, prognosis or treatment of disease. Symptoms as a rule are a personal prerogative of the patient, while signs are discovered by the physician. There are exceptions to this statement, but these emphasize its general truth. Since an individual considers himself in good health until something arises which interferes with or embarrasses his capacity for work or pleasure, it is therefore a symptom or symptoms which usually first induce him to seek medical advice. Such sensations or symptoms are the first manifestations of disordered or embarrassed function and frequently are complained of before anatomic changes are detectable. Thus it is obvious that they are of the utmost importance. Sir James Mackenzie, one of the greatest clinicians of the past generation and the father of modern clinical cardiology, was firmly convinced that medical research had too long neglected the investigation of the early symptoms and during the latter years of his life devoted his energies to their elucidation. He was particularly interested in the significance and mode of production of visceral discomfort and pain. There is no doubt that the greatest symptom of all is pain in its varying characters, intensities and localizations. It may be called *the* symptom of localization.

But little inferior to pain in symptomatic importance is dyspnea. Some years ago I defined it as follows: "Dyspnea is the consciousness of the necessity for increased respiratory effort." Although this symptom is referred to the respiratory system, its causation is not confined by any means to pulmonary lesions. Whereas pain is chiefly a local phenomenon, dyspnea is broadly systemic and there is practically not one of the great systems which, when disturbed after a certain manner, may not produce a respiratory consciousness. It is with these respiratory disturbances, the mode of their production, and their clinical significance that I wish to deal here.

### REGULATION OF RESPIRATION

Ordinarily in the healthy individual respiration is an unconscious function, although it can be modified at will. With these voluntary modifications the present discussion is not concerned. A short review of the unconscious or spontaneous act of respiration is, however, essential.

The rhythmic inflation and deflation of the lungs, which produces pulmonary ventilation, must be able to accommodate itself to great changes at short notice. This is done in the first instance by increasing or decreasing the volume of each respiration and later, if necessary, by an acceleration or diminution in the rate. The turnover from inspiration to expiration is brought

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Read before the General Scientific Meeting at the Eighty-Fifth Annual Session of the American Medical Association, Cleveland, June 12, 1934.

about by what is commonly called the Hering-Breuer reflex. I shall not enter into the pros and cons that have given rise to a controversy about this reflex but will merely state that it is supposed to depend on variations in tension of the alveolar wall. As the lungs are inflated by inspiration the tension increases to a certain point, when the reflex turns inspiration to expiration. The pathway for the afferent impulses is through the vagus, while the efferent impulses pass by way of the phrenic and spinal nerves. A mechanism such as described would be automatic but rigid unless some means were at hand to vary the points at which the reflex reversal took place. There is strong evidence to suggest that in the midbrain (anatomically vague but physiologically fairly definite) there is an area called the respiratory center, which initiates the respiratory rhythm and controls the points of the reflex. This center is in its turn responsive to its own hydrogen ion concentration, which is one of the most constant of the internal equilibriums. If this increases or becomes more acid, the points of the Hering-Breuer reflex become farther apart and respiration deepens in volume and increases in rate; if it decreases or becomes more alkaline the points approximate and respirations become more shallow and slower until they may finally cease.

It is quite apparent from this short description that the control of respiration depends on two factors, one chemical, the other nervous. It is not within the scope of the present paper to deal in detail with the hydrogen ion control of the blood and tissues, but the rôle of carbon dioxide cannot be omitted. It may be stated in brief that the kidneys are the principal organs that maintain the gross hydrogen ion equilibrium, but it remains for the lungs to control the finer variations through their elimination or retention of carbon dioxide. The vast majority of substances that influence the reaction of the blood and tissues diffuse quite slowly in and out of cells, while carbon dioxide is very soluble and readily diffusible. Therefore, although it is a weak acid, it is ideal for the finer regulation of the acid base equilibrium of the body. If for any reason the tissues, including the respiratory center, tend to an increase of hydrogen ions, the respiratory center through its nervous control of the Hering-Breuer reflex and of the respiratory muscles (diaphragm and intercostals) increases the pulmonary ventilation, which in turn augments the elimination of carbon dioxide, which reduces the hydrogen ion concentration of the blood and, in turn, of the tissues, thus helping to restore the normal internal environment. The opposite occurs when the hydrogen ion concentration decreases; then pulmonary ventilation is reduced. At times respiration struggles against an increasingly impossible task, as in untreated diabetic acidosis or the profound and increasing alkalosis of intractable vomiting.

The respiratory center is also sensitive to changes in oxygen tension. If for any reason an adequate supply of oxygen is not furnished to the respiratory center, it is more sensitive to its normal or increased hydrogen ion concentration. This reduction in oxygen supply may be due to a number of causes: (1) imperfect aeration of the blood as it passes through the lungs, (2) a deficiency of hemoglobin, as in anemias, or (3) a reduced total blood flow or a local slowing of blood flow through the respiratory center.

It is obvious, then, that dyspnea can be produced by either increased acidity or decreased oxygenation of the respiratory center. But there is also a local pulmonary factor, which has probably not received sufficient recognition in the past but which may be of profound significance in the genesis of dyspnea. The primary stimulus of the Hering-Breuer reflex is the tension change in the lung parenchyma that occurs on inflation, and any condition, such as pulmonary engorgement, that decreases the distensibility of the lung will exaggerate the excitability of this reflex. In other words, any condition that increases the rigidity of the lung will tend to produce rapid and shallow breathing with dyspnea. If the nervous and clinical control of respiration as outlined is intact and in normal equilibrium, respiratory consciousness should not be present under all conditions of rest and work appropriate to the individual's age and training.

Before proceeding to deal individually with different pathologic conditions, I will state that dyspnea is quantitative. Any one can become short of breath under given conditions of exercise, even the perfect athlete. Further, advancing years reduce one's capacity for physical work, but dyspnea is not really abnormal unless it is produced by conditions that are less than would be expected for the average individual, taking into consideration his age and manner of life. Dyspnea that would be considered abnormal in a youth might be quite well expected in an octogenarian. In progressive states dyspnea will be first noticed on exertion and as the cause increases the margin of activity will become more and more limited until there is respiratory consciousness even during complete rest. Therefore, dyspnea is not only a qualitative but also a quantitative symptom of comparative accuracy.

TABLE 1.—*Causes of Dyspnea*

| | |
|---|---|
| 1. Acidosis (including carbon dioxide acidosis) | |
| 2. Oxygen want | |
| 3. Lesions near the respiratory center | |
| 4. Increased sensitivity of Hering-Breuer reflex | Pulmonary fibrosis |
| | Pulmonary emphysema |
| | Pulmonary congestion |
| 5. Interference with diaphragmatic or intercostal action | |
| 6. Neuroses | |

Numerous attempts have been made to correlate the degree of dyspnea with various measurements, such as the vital capacity and the ventilation equivalent. Any such correlation has been shown to be thoroughly untrustworthy. However, when one comes to analyze the lung volume and its subdivisions in greater detail, it can be shown that the degree of respiratory impairment is directly proportional to the ratio of the functional residual air to total capacity of air or, more simply expressed, the ratio of the amount of air normally in the lungs to the volume of air in the lungs on full inspiration. Time does not permit of entering into a discussion of the real meaning of this ratio; suffice it to say that under average normal conditions it lies between 3 and 4 to 10 and that, as this ratio approaches unity, dyspnea becomes more and more intense. The measurement of this ratio is of especial significance in the estimation of the disability resulting from silicosis and other forms of pulmonary fibrosis.

In table 1 there is a brief but, I believe, comprehensive synopsis of the causes of dyspnea. It is true that there may be a number of variants of each of these causes. These may be produced by different means, but the end result will be in general the same. In order that a more detailed outline may be afforded, I have grouped them under principal systems. This grouping

may seem arbitrary at times but it has the advantage of brevity and also I believe of clarity.

The exact nature of the substances causing the acidosis in uremia and prostatism is not stated. It would be beyond the scope of the present paper to enter into a discussion of these. Furthermore, in certain cases of diabetes, terminal nephritis and prostatism, circulatory complications either as associated lesions or due to age may exert a powerful influence in producing dyspnea when the acidosis may be mild or absent. The more one tries to analyze and reduce to simple statements the pathologic physiology of dyspnea, the more one encounters lesions in which there is a summation of the possible causes that may operate in varying degrees in different cases.

TABLE 2.—*Metabolic Disturbances*

| Disease or Condition | Stimulus | Type of Breathing | Treatment |
|---|---|---|---|
| Exercise | Carbon dioxide excess | Full and deep | Physical training |
| Diabetes | Ketosis (acidosis) | Full and deep | Insulin and carbohydrates |
| Nephritis, uremia | Acidosis | Full and deep (Cheyne-Stokes) | Treat nephritis |
| Prostatism | Acidosis | Full and deep | Relieve urinary retention |
| Hyperthyroidism | Carbon dioxide excess, sympathetic ? | Full and deep | Iodine or operation |
| Insulin shock | Low blood pressure, sinus caroticus ? | Rapid and shallow | Carbohydrates |

TABLE 3.—*Pulmonary Diseases*

| Diseases or Condition | Stimulus | Type of Breathing | Treatment |
|---|---|---|---|
| Laryngeal or bronchial obstruction | Carbon dioxide retention, oxygen want | Forcible inspiration and ineffective expiration | Removal of obstruction |
| Asthma | Carbon dioxide retention, oxygen want, later loss of elasticity | Forcible inspiration and ineffective expiration | Epinephrine, ephedrine and desensitization |
| Emphysema | Loss of elasticity and sensitivity of Hering-Breuer reflex | Forcible inspiration and ineffective expiration | Abdominal binder to support diaphragm in expiration |
| Pneumonoconiosis | Loss of elasticity and sensitivity of Hering-Breuer reflex ? | Forcible inspiration and ineffective expiration | Abdominal binder to support diaphragm in expiration |
| Lobar pneumonia | Pulmonary congestion and sensitivity of Hering-Breuer reflex | Rapid and shallow | Treat penumonia specifically; continuous oxygen therapy if there is cyanosis; artificial pneumothorax ? |
| Massive collapse | Pulmonary congestion and sensitivity of Hering-Breuer reflex | Rapid and shallow | Artificial pneumothorax; carbon dioxide therapy |
| Infarction | Pulmonary congestion, sensitivity of Hering-Breuer reflex and low blood pressure (see shock) | Rapid and shallow | Treatment of the shock |
| Bronchopneumonia | Pulmonary congestion, sensitivity of Hering-Breuer reflex, low blood pressure, carbon dioxide retention, oxygen want | Rapid and shallow | Continuous oxygen therapy if cyanosis is present |

In obstruction, asthma, emphysema and probably pneumonoconiosis, the functional disturbances of respiration are chiefly inherent in the difficulties of expiration. Inspiration is accomplished by the action of a strong muscular mechanism. Expiration is ordinarily a passive act furthered by the negative intrapleural pressure, but in those conditions due to the loss of elasticity it is transformed into an active function producing a positive intrapleural pressure, which in time undoubtedly will be harmful to the return flow of the venous blood.

Furthermore, in these conditions the lungs are almost in a state of full expansion when inspiration is initiated; therefore a greater physical effort is demanded to expand the inelastic lung still farther. It has been found that the functional residual air in these conditions is greatly increased, while the total capacity is unchanged or decreased. Therefore, instead of the ratio of the functional residual air to the total capacity being about 0.4 (4 to 10), it is between 0.7 and 0.8 (7 or 8 to 10). This would have but little effect in the normally elastic lung but in these cases in which the elasticity is so greatly reduced and proper ventilation grossly impaired, it contributes to the difficulty of gaseous exchange and thus accentuates the dyspnea.

TABLE 4.—*Circulatory Diseases*

| Diseases or Condition | Stimulus | Type of Breathing | Treatment |
|---|---|---|---|
| Cardiac | | | |
| Mitral disease | Pulmonary engorgement, sensitivity of Hering-Breuer reflex | Rapid and shallow | Treatment of cardiac function and pulmonary engorgement; abdominal binder |
| Congestive cardiac failure | Pulmonary engorgement, sensitivity of Hering-Breuer reflex, central anoxemia ?, carbon dioxide retention | Rapid and shallow | Treatment of cardiac function and pulmonary engorgement; abdominal binder; oxygen therapy if cyanosis relieved; venesection for increased venous pressure |
| Myxedema | Pulmonary engorgement, sensitivity of Hering-Breuer reflex | Rapid and shallow | Treatment of hypothyroidism with caution |
| Coronary lesions | Chronic: pulmonary engorgement, sensitivity of Hering-Breuer reflex<br>Acute: shock, low blood pressure (see shock) | Rapid and shallow<br>Rapid and shallow | Oxygen therapy if cyanosis relieved; venesection for increased venous pressure; treatment of shock |
| Peripheral Hypertension | Pulmonary engorgement, later central anoxemia ? | Rapid, with tendency to Cheyne-Stokes | Treatment of pulmonary engorgement as above |
| Renal hypertension | Pulmonary engorgement, later central anoxemia ? | Rapid, with tendency to Cheyne-Stokes | Treatment of pulmonary engorgement as above |
| Arteriosclerosis without hypertension | Pulmonary engorgement, later central anoxemia ? | Rapid, with tendency to Cheyne-Stokes | Treatment of pulmonary engorgement as above |
| Anemias | Oxygen want ?; muscular weakness ?; congestive failure ? | Rapid and shallow | Treatment of anemia |

The interaction of different causes of dyspnea in disturbances of circulation makes the untangling of the different factors somewhat difficult to express in general terms. The degree of each functional disturbance varies from case to case and from time to time in the same case. There are in these cases four possible factors: pulmonary engorgement leading to hypersensitivity of the Hering-Breuer reflex; arterial anoxemia due to faulty pulmonary aeration; central anoxemia due to arterial anoxemia or due to slowing of the general blood flow or to a local arterial lesion as in advanced

stages of essential hypertension, renal hypertension or arteriosclerosis without hypertension. Absolute proof is wanting that there is a reduction in the oxygen consumption of the brain in severe cases with dyspnea and orthopnea; in fact, all evidence suggests the contrary but it also strongly indicates that the higher centers are enduring a lower partial pressure of oxygen. This would be equally so whether there was an arterial anoxemia, a general slowing of the blood flow or local slowing due to arterial disease. Increasing venous pressure would tend to aggravate these conditions and there seems little doubt that orthopnea is an attempt to compensate for this. The dyspnea of anemia is probably also due to a combination of several factors, of which oxygen want due to the reduced amount of hemoglobin to carry oxygen is probably the most important, as it would not only affect the respiratory center itself but lead to impairment of myocardial as well as respiratory efficiency.

Among the nervous disorders are grouped a miscellaneous collection of conditions, some of which may not rightly belong there but for the sake of conciseness are included. Probably the most interesting and the least recognized are those due to psychic causes. They are much commoner than is usually appreciated and often lead to mistakes in diagnosis. Their outstanding character is the irregularity of the respirations both in depth and in rate and the tendency to paroxysmal outbursts.

TABLE 5.—*Nervous Disorders*

| Diseases or Condition | Stimulus | Type of Breathing | Treatment |
|---|---|---|---|
| Cerebral | | | |
| Traumatic (edema or hemorrhage) | Stimulus to respiratory center | Deep and slow; deep and rapid; periodic | Relief of intracranial tension |
| Tumors | Stimulus to respiratory center | Deep and slow; deep and rapid; periodic | Relief of intracranial tension |
| Postencephalitic | Stimulus to respiratory center ?; psychic ? | Paroxysmal | ? (Treatment of psychosis if present) |
| Psychic | Anxiety neurosis | Rapid, shallow and irregular | Treatment of primary cause |
| | Conversion hysteria | Rapid, deep and irregular | Treatment of primary cause |
| Shock | Low blood pressure; sinus caroticus ? | Rapid and shallow | Treatment of primary cause |
| Respiratory paralysis | | | |
| (a) Nerve<br>(b) Muscular | Mechanical | Rapid and shallow | Treatment of primary cause |
| Abdominal distention | Mechanical | Rapid and shallow | Treatment of primary cause |
| Thoracic pain | Reflex inhibition of movement | Rapid and shallow | Treatment of primary cause |

A few words must here be given to the dyspnea that occurs in various conditions of visceral shock such as occurs with coronary and pulmonary infarction, renal and gallbladder colic and Dietl's crises. The dyspnea in all these conditions appears to be intimately associated with the fall of blood pressure, and there is much to suggest that the sinus caroticus is in the same manner responsible for the respiratory disturbance.

I have attempted in the short time at my disposal to give a bird's eye view of this rather large subject. I have tried to leave out nothing of importance and at the same time not to befog with too much detail the practical importance of dyspnea or consciousness of respiration. There are many knots still to be unraveled and, as it is the most important of the early symptoms of systemic disease, continued endeavors will be well rewarded.

## REPORT OF THE COMMITTEE ON DEFINITION OF BLINDNESS

Your committee was appointed in response to a request from the Department of Public Welfare of the State of Illinois for a definition of blindness, in scientific terms, that might be made statutory. Such a definition should be brief, definite and comprehensive. It cannot include and settle all the problems that grow out of blindness. It cannot radically alter the meaning generally attached to a word that has been widely used by many people over a long period of time. It can be made practical only by recognizing that blindness varies in degree, and the resulting disabilities must be broadly implied by the use of auxiliary words to indicate conditions that can be generally recognized. Your committee is indebted to the Report on Definition of Blindness compiled by the Bureau of Legal Medicine and Legislation of the American Medical Association in October 1933.

To give effect to the report of your committee it must be considered and discussed in the Section on Ophthalmology, and, when agreed to by the section, the endorsed definitions must be transmitted to the House of Delegates for its approval. The rules of the House of Delegates prevent the introduction of new business on the last day of the annual meeting.

The definition of a word is fixed by usage. Blindness has been so widely used by people who had no exact knowledge of what they meant by it that it cannot be restricted to a sharply defined impairment to vision.

The makers of dictionaries, from studies of the use of words, have come to general agreement in their definitions of blindness. The Oxford Dictionary gives: blind, "destitute of the sense of sight"; blindness, "blind condition, want of sight." The Standard Dictionary, "the state or condition of being blind." The Century, blindness, "want of sight." The International, "state or quality of being blind." Gould's Medical Dictionary, "deprived of sight, want of vision."

The general disposition to help the blind requires definitions that can be applied by legislation, appealed to in the courts, and serve for purposes of justice and in decisions as to insurance and workmen's compensation. Definitions agreed on and understood by ophthalmologists are useful, although they need to be embodied in special legislative acts designed to help the blind. In the Blind Persons Act of Great Britain the definition used is "One so blind as to be unable to perform any work for which eyesight is essential." For the "Education Act" the blind are those "too blind to be able to read the ordinary school books."

The public needs to know that poor vision of different kinds and degrees is worthy of legal recognition. In a broad way, visual acuity of less than one tenth may be recognized as economic blindness. Equal disability from restriction of the visual field may demand the same recognition. There is a series of disabilities for seeing that extends from full vision to complete blindness. No definition can draw a rigid line between vision and blindness that shall apply to all persons and all kinds of visual impairment. It will clear away some confusion to insist that questions of the existence and degree of blindness must be passed on in each particular case by some one accustomed to study and treat the diseases of the eye.

We recommend the adoption of the following definitions for grades of blindness:

Total blindness is inability to perceive light; lack of light perception. The person who is totally blind cannot tell whether strong light falls on his eyes or whether they are in total darkness. Light perception is vision such as one has when the eyelids are closed.

Economic blindness is absence of ability to do any kind of work, industrial or otherwise, for which sight is essential. In general, visual acuity of less than one tenth has been classed

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as economic blindness, meaning that objects can be recognized only when brought within one tenth of the distance at which they can be recognized with standard vision. Such vision in the better eye when corrected with the best possible glass would be recorded as less than 0.1 or 6/60 or 20/200, or as an equally disabling loss of the visual field.

Vocational Blindness is impairment of the vision that makes it impossible for a person to do work at which he had previously earned a living. He may still have vision enough to do some other kind of work that may yield him an adequate support. Such vision in the better eye with the best possible correcting glass may vary from one tenth to one third; that is, from 0.1 or 6/60 or 20/200 to 0.3 or 6/18 or 20/60, depending on the vision required for the occupation previously followed.

Educational blindness is such loss of sight as makes it difficult, dangerous or impossible to learn by the methods that are commonly used in schools. This necessitates two types of schooling for such individuals; namely, sight saving classes and schools for the blind. The requirement for admission to sight saving classes is vision in the better eye with the best possible correcting glass of less than 20/70 and more than 20/200.

The requirement for admission to the school for the blind is vision in the better eye, with the best possible correcting glass, of 0.1 or 6/60 or 20/200 or less.

Respectfully submitted.

EDWARD JACKSON, Chairman.
A. C. SNELL.
HARRY S. GRADLE.

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# Therapeutics

## THE THERAPY OF THE COOK COUNTY HOSPITAL

EDITED BY BERNARD FANTUS, M.D.
CHICAGO

NOTE.—*In their elaboration, these articles are submitted to the members of the attending staff of the Cook County Hospital by the director of therapeutics, Dr. Bernard Fantus. The views expressed by various members are incorporated in the final draft for publication. The series of articles will be continued from time to time in these columns.*—ED.

### THERAPY OF BURNS

It is necessary to distinguish between (*a*) burns of limited extent, (*b*) infected burns, and (*c*) extensive burns.

In all cases of deep burns a prophylactic dose (1,500 units) of tetanus antitoxin should be administered.

#### FRESH (ASEPTIC) BURNS OF LIMITED EXTENT

Fresh (aseptic) burns of limited extent require protection against infection and relief of the burning pain.

(*a*) Sodium bicarbonate, made into a thick paste with water, applied thickly and kept in place with a sterile bandage, is probably the best domestic emergency

PRESCRIPTION 1.—*Trinitrophenol Solution*

| | | |
|---|---|---|
| ℞ Trinitrophenol | | 10.00 Gm. |
| Alcohol | | 100.00 cc. |
| Sterile water | to make | 1,000.00 cc. |

M. Label: Apply on compress to burns of limited extent. This solution may be kept on hand.

application. A change of dressing is indicated by the appearance of a discharge on the outer covering.

(*b*) In using a trinitrophenol (picric acid) compress (prescription 1), one should soak a sterile gauze pad in the solution, cover by a dry gauze pad, and bandage lightly, distended blisters having previously been punctured in an aseptic manner. Rubber gloves should be worn to prevent staining of the hands. In superficial burns the original dressing may be left on until complete healing has taken place. A dressing may be changed as often as required by a discharge commencing to appear at the surface of the dressing, maybe every two or three days. If the previous dressing sticks, it may be softened by moistening with the same solution. This dressing must not be used on extensive burns because of the danger of poisoning.

PRESCRIPTION 2.—*Gentian Violet Jelly*

| | | |
|---|---|---|
| ℞ Gentian violet | | 1.00 Gm. |
| Tragacanth (tears) | | 3.00 Gm. |
| Sterile water | | 100.00 cc. |

Make into a jelly. Label: Apply a thick layer on gauze pad; cover with dry gauze pad and sterile dressing.

(*c*) Gentian violet jelly (prescription 2) is claimed to be superior to any of the foregoing because it is antiseptic, analgesic and nontoxic and produces a thin, light eschar, qualities not presented thus combined in any of the others.

#### INFECTED BURNS

When, by reason of improper previous treatment, infection has occurred with excessive and offensive discharge, foul sloughs and inflammation spreading into surrounding tissue, cleansing must be done by irrigation with Surgical Solution of Chlorinated Soda and loose sloughs must be removed with forceps and scissors. Such treatment should be repeated daily, and during the intervals hot boric acid dressings, large enough to extend way beyond the limit of redness, should be applied so as to provoke reactionary hyperemia in surrounding tissue to check the spread of the infection. These dressings should be changed at first often enough to keep them hot; i. e., at least every two hours day and night. As soon as spreading of infection has been checked, they need not be applied as hot and should be changed merely often enough to keep them moist; i. e., every four hours.

When the infection has been "cleaned up," the raw surface is treated in accordance with the principles of ulcer therapy (q. v.).

#### EXTENSIVE BURNS

Extensive burns threaten life in proportion to the surface area involved.

1. Shock (q. v.) is treated by absolute recumbency, warmth, morphine sulphate 0.015 Gm. hypodermic injection, pushing of fluids by all available channels, aiming at from 4 to 8 liters in the twenty-four hours, antagonizing hypochloridation by Physiologic Solution

PRESCRIPTION 3.—*Ether Soap*

| | | |
|---|---|---|
| ℞ Soft soap | | 300.00 Gm. |
| Alcohol | | 200.00 cc. |

Mix and allow to stand for 24 hours; decant from sediment and add
Ether ..... enough to make 1,000.00 cc.

Label: Ether Soap. (Useful preoperative detergent, especially for removal of all kinds of fatty material.)

of Sodium Chloride and acidosis by the administration of dextrose phleboclysis. Early blood transfusion may save life. As soon as the symptoms of shock abate, the next step may be taken.

2. The wound is cleansed, best with ether soap (prescription 3), if fatty material has been previously applied, and in a general warm (100 F.) bath if the

involvement is very extensive, débridement being employed to remove all undoubtedly dead tissue.

3. A "cradle tent" is placed over the patient, who is to lie in it, without clothing or dressing, on a sterile sheet with the most affected body surface uppermost. Enough incandescent electric lights (maybe four or six) are permitted to burn within the "tent" to maintain a temperature of about 85 F.

4. Coagulation of dead surface cells should be undertaken as promptly as possible, for every hour's delay endangers life.

PRESCRIPTION 4.—*Normal $p_H$ Tannic Acid Solution*

℞ Tannic acid..... 50.00 Gm.
Anhydrous sodium carbonate..... 7.95 Gm.
Sterile water.....to make 1,000.00 cc.

M. (Must be freshly prepared.)
Label: Spray with atomizer over affected surface every fifteen to thirty minutes.

(*a*) Tannic acid solution 5 per cent must be freshly prepared when used. For this purpose 5 Gm. packages of tannic acid should be kept on hand, one of which may be dissolved in 100 cc. of sterile water. Tannic acid solution of normal (7.4) $p_H$ value (prescription 4) might be preferable. The solution is sprayed on every fifteen to thirty minutes to form a good coagulum within the first twenty-four hours, after which no further application is necessary for several days, unless blisters form. These should be opened with sterile scissors, the loose outer layer of epidermis removed, and the tannic acid solution applied as before. When, by the sixth to the eighth day, exudate begins to form beneath the crusts, especially if symptoms of sepsis appear, the fluctuating areas are incised and compresses of Surgical Solution of Chlorinated Soda are applied to dissolve and remove the dead tissue and to secure a clean granulating surface.

(*b*) Gentian violet in 1 per cent solution sprayed on the burned area every two hours is claimed to form a tough but more elastic eschar, which being antiseptic inhibits germ growth, which is likely to destroy the small epithelial islands that may have been spared by the burn and that are responsible for the septic temperature so prone to develop after the first few days under the tannic acid treatment. After a good eschar is formed, the area is sprayed every four to six hours during the day. Blebs are opened and the unstained tissue thus exposed is sprayed with the dye solution. The eschar is examined daily for softened areas, which must be removed by picking up with forceps, after which the surface is again sprayed with the dye. The eschar, which acts as a scaffolding to the healing process, curls up at the periphery, whereupon it should be trimmed away to prevent the formation of pockets, which might become infected. By the third week the eschar should be removed by means of warm compresses of sterile physiologic solution of sodium chloride and it will be ready for the next step:

5. Skin grafting (see Ulcer Therapy) or other methods of plastic surgery should not be postponed until crippling contractures have developed; and their establishment should even prior to this be antagonized by posturing the involved area so as to prevent the formation of flexure deformities.

6. The general care of the patient may require, in addition to maintaining optimal nutrition, analgesia (see Therapy of Pain), fever regimen (q. v.) and the securing of an abundance of sleep (see Insomnia).

## *Council on Physical Therapy*

THE COUNCIL ON PHYSICAL THERAPY OF THE AMERICAN MEDICAL ASSOCIATION HAS AUTHORIZED PUBLICATION OF THE FOLLOWING ARTICLE.
H. A. CARTER, Secretary.

# FACTORS INFLUENCING THE CHOICE OF A SOURCE OF RADIANT ENERGY

## (ULTRAVIOLET, LUMINOUS AND INFRA-RED)

HENRY LAURENS, PH.D.
NEW ORLEANS

The number of diseases or of abnormal conditions really or primarily benefited by sunlight is small in comparison with the enormous number for which such claims have been made by manufacturers and clinicians. A recent report of the Council on Physical Therapy of the American Medical Association [1] bears testimony to this.

No one now doubts that sunlight represents one of the benefits of an outdoor life, that it is one of the things that make for physical and mental well being, that in extrapulmonary tuberculosis it confers immeasurable benefit, that in rickets certain wavelengths are specific; but there is still a strong tendency to exaggerate the vital importance of sunlight (natural and artificial) and to make extravagant claims for it as a therapeutic force. Certain diseases and disabilities are partly due to deficient radiation of various kinds, and doubtless the health of the community may be improved by providing more radiation where sunlight does not reach the small minimum required for health; but sunlight is only one of the many environmental factors that affect vitality.

On the face of it, it would seem a simple matter to select an artificial source of radiant energy (ultraviolet, luminous and infra-red energy). This is true, however, only for experienced physical therapists, and particularly those who have made some special study of this branch or subdivision of physical therapy. The average physician, on the other hand, knows little or nothing about the characteristics of natural sunlight, and less about the "artificial sunshine" emitted by lamps. A perusal of the literature put out by many manufacturers only confuses him, if he reads it literally, with its claim of simulating the sunlight of the High Alps or of some other geographic area. There is, of course, no source of radiant energy that does this, although it is closely approximated by a carbon arc, consuming 25 amperes or more, burning specific carbons, such as the "Sunshine" carbons.

The energy emitted by various artificial sources varies in intensity and in spectral distribution. The intensity of solar radiation (sunlight) on the earth's surface varies considerably, chiefly on account of location, season and time of day. The sun itself is a variable star, the total amount of radiation that it emits varying by as much as 5 per cent. Furthermore, the amount of radiation that reaches the earth's surface is greatly dependent on changes in atmospheric transparency occasioned, for example, by smoke, water vapor and dust.

From the Laboratory of Physiology, Tulane University of Louisiana School of Medicine.

1. Regulations to Govern Advertising of Ultraviolet Generators to the Medical Profession Only, J. A. M. A. **102**: 841 (March 17) 1934.

The use of radiant energy (natural or artificial sunshine) for therapeutic or scientific purposes must be built on a strong foundation of physics, and users of lamps, since they are essentially trying to imitate sunlight and its effects, must know something about the physics of their sunlight. They certainly should know how much, or approximately how much, energy (expressed in ergs, gram calories or microwatts) the patient is getting, and the distribution of this energy; that is to say the percentage of the total energy that is ultraviolet, luminous and infra-red.

The radiations of artificial sources represent but approximations to sunlight and no two sources are alike in respect to the distribution of the energy they emit. This is the physical reason why different sources cannot produce the same physiologic or therapeutic action. Every one using artificial sunlight should realize this and not be misled into believing that the energy emitted by this, that or the other lamp represents "artificial sunlight" when in many cases it is as far from that as it can possibly be.

The variations in the intensity of the energy actually emitted by the sun are the result of either long period fluctuations, due to changes in solar activity, or of short period fluctuations, due to obscurations in the solar atmosphere which, rotating with the sun, produce depressions whenever they point toward the earth. The variations in total solar energy influence particularly the ultraviolet. For instance, with a range of only 2.3 per cent in total energy the ultraviolet at 3,500 angstroms [2] shows a variation of about 30 per cent and much more at and shorter than 3,100 angstroms—the antirachitic region.

At the surface of the earth with the sun moderately high and a total radiation intensity of 1 gram calory per square centimeter per minute (70,000 microwatts per square centimeter) and 1.5 gram calories per square centimeter per minute (105,000 microwatts per square centimeter), the percentage of the ultraviolet is between 1 and 5, the luminous between 41 and 45, and the infra-red between 52 and 60. When the sun is lower (i. e., farther from the zenith) the ultraviolet is decreased and the infra-red increased. At high altitudes above sea level the percentage of ultraviolet increases at the expense of the infra-red. The total energy, of course, is also greater than at sea level. Only about 75 per cent of the sun's energy penetrates as low as 1,800 meters and only 50 per cent to sea level, and this on the clearest days and when the sun is high. The seasonal variation in the shortest ultraviolet wavelength getting through to the earth's surface at midday is about 120 angstroms (from 2,970 to 3,090 angstroms) and the diurnal variation ranges between 60 angstroms in winter (from 3,060 to 3,120 angstroms) and 240 angstroms in summer (from 2,960 to 3,200 angstroms). Summer midday sun is only 10 per cent richer in the infra-red than is winter sun, in the red 45 per cent, in the green 90 per cent, in the blue-violet 250 per cent, and in the ultraviolet 1,000 per cent. Spring sunlight is the strongest and richest in infra-red, the autumn sun, by comparison, being richer in ultraviolet, the maximum content of which is reached in the summer.

The shortest wavelength that gets through the atmosphere to the earth depends on solar altitude; e. g., at Davos, Switzerland (1,560 meters), with the sun 30 degrees above the horizon the shortest wavelength recorded was 3,043 angstroms, while at 60 degrees it was 2,979 angstroms.

Solar radiation is often described as extending from 3,000 angstroms to 3 microns.[3] On the long waved side there is a small amount of radiation as long as 5 microns, and traces beyond that, but less than 1 per cent is longer than 3 microns. And on the short-waved side it is only on days of exceptional clearness and purity of the atmosphere that any wavelengths shorter than 3,000 angstroms penetrate to sea level. In New Orleans, for instance, on only one day since the beginning of 1928 has the wavelength 2,990 angstroms been recorded. During the winter months the spectrum rarely extends below 3,060 angstroms, except on very clear days. From June 1 to Dec. 31, 1929, only three days showed limits shorter than 3,040 angstroms; only five days in 1930 and only twelve days from January to August 1931. Air pollution, clouds and haze decrease the extent of the spectrum, so that even in August the spectrum does not often extend below 3,100 angstroms. Measurements made in Chicago showed that there was comparatively little ultraviolet radiation of wavelengths shorter than 3,030 angstroms from December to March. On the other hand, it has been demonstrated in many cities (New York, Boston, Toronto, New Brunswick, Ithaca, New Orleans) that winter sunshine is antirachitic; that is to say, it contains a sufficiently large proportion of wavelengths shorter than 3,130 angstroms to cure and prevent rickets.

It is of interest to remember that in all there are six principal causes of variation in solar radiation intensities at the surface of the earth: (1) variations in the amount of energy radiated from the sun, (2) variations in the earth's solar distance, (3) amount of water vapor in the atmosphere, (4) dustiness or haziness of the atmosphere, (5) zenith distance of the sun, and (6) altitude above sea level.

The hemispherical dome of the sky may be compared to the sun as a source of radiant energy. Skylight is nothing more than sunlight scattered by the atmosphere. The scattering is inversely proportional, in a perfectly dry dust-free atmosphere, to the fourth power of the wavelength, and therefore ultraviolet is relatively much more increased in scattered daylight than in direct sunlight.

On a clear summer day at places up to about 1,560 meters above sea level the total diffuse radiant energy from the sky is between 12.5 and 33⅓ per cent of the total, and at midday the radiation received on a horizontal surface from the sky averages 25 per cent of that received from the sun. At Davos, Switzerland (1,560 meters), on a perfectly clear day the sun accounts for 88.5 per cent and the sky for 11.5 per cent of the luminous rays incident on a horizontal surface.

At New Orleans at noon on clear days the sky contributes between 7 and 17 per cent of the total (sun and sky) radiation. The presence of clouds increases considerably the percentage of the total contributed by the sky; e. g., on April 24, 1931, sky radiation at noon composed 31 per cent of the total (sun and sky) radiation.

The spectrum of the ultraviolet radiation from the sky ends approximately just where that of the sun does. At Davos, Switzerland, the values for the ultraviolet shorter than 3,660 angstroms received directly from the sun are hardly 90 per cent of those from the sky alone. At higher altitudes above sea level this does not hold

2. The angstrom unit of wavelength is one ten-millionth millimeter.

3. The micron is one one-thousandth millimeter.

for solar altitudes above 40 degrees, the sun being then a more powerful source of ultraviolet than is the sky.

It is strange, in the light of such facts, to consider how much importance is attached to exposure to direct sunshine. Of course, when such exposure is made, radiation is being received from both the sun and the sky; but, so far as the ultraviolet is concerned, the sky alone is a more potent source than is the sun alone.

According to careful measurements the total amount of ultraviolet radiation of wavelengths less than 3,100 angstroms in sunlight is extremely small. Coblentz and Stair in 1929 concluded that even on the clearest days at the noon hour in summer such energy at the most amounted to only 0.3 per cent of the total incident radiation (or about 0.004 gram calory, or 280 microwatts), and more likely only one tenth of this value at sea level stations. The so-called average value, which would be much lower, depends on the condition of the sun, the altitude and latitude of the station, and the almost infinite variety of air pollution and weather conditions that are encountered at different seasons of the year and during different years. In New Orleans, Laurens and Mayerson find that the maximum ultraviolet of wavelengths shorter than 3,100 angstroms on clear days approximates 0.001 gram calory per square centimeter per minute (70 microwatts).

Greider and Downes found the percentage of the total radiation between 2,900 and 3,100 angstroms at the Springfield Lake Sanatorium, near Akron, Ohio, and at Cragmor Sanatorium, near Colorado Springs, Colorado, to be of the order of 0.01 and 0.02 and on Mount Wilson (1,750 meters) about 0.1. At Davos (1,650 meters) the ultraviolet between 2,900 and 3,100 angstroms is 0.4 per cent of the total ultraviolet and at the two sanatoriums mentioned by Greider and Downes it is between 0.6 and 0.7 per cent. Pettit deduced that on Mount Wilson the intensity of the ultraviolet component of wavelengths 2,900 to 3,100 angstroms in midsummer sunlight amounts to about 70 microwatts per square centimeter (0.001 gram calory per square centimeter per minute). This amounts to 90 microwatts per square centimeter (0.00129 gram calory per square centimeter per minute) for wavelengths 2,900 to 3,130 angstroms. Coblentz and his co-workers now believe that the average amount of ultraviolet solar radiation of wavelengths shorter than 3,130 angstroms for mid-latitude sea level stations during the clearest weather during midday in midsummer is about 90 microwatts (0.00129 gram calory), decreasing to about 20 microwatts (0.000285 gram calory) on the clearest days in midwinter.

## CHOICE OF SOURCE

In many places the intensity of sunlight varies too much or is too weak for too great a proportion of the time to permit of its being a practical source of radiant energy. In the choice and use of an artificial source, there are two basic considerations: (1) the physical nature (quantity and quality) of the energy emitted by the lamp; (2) the specific part or parts of the spectrum of sunlight found most efficient in the particular condition it is desired to alleviate or aid and which should thus be sought in sufficient quantity in the artificial radiation.

There is a general, almost universal, but wrong, tendency to limit the biologic effects of radiant energy and their therapeutic action to the ultraviolet and particularly to the region between 2,900 and 3,130 angstroms. That radiation is solely or mainly active because of the ultraviolet fraction has been unequivocally demonstrated in only a few instances (rickets and infantile tetany). There is considerable evidence on the other hand that the luminous and infra-red rays, even if not specific in their action, aid the ultraviolet rays.

At the Finsen Light Institute in Copenhagen it is believed that the sun is unquestionably the best of all sources of radiant energy, where and when it is available, and that the best artificial source is to be decided on the basis of the similarity of its spectrum to that of the sun or as to its content of those rays which typify the therapeutic action of sunlight.

On the basis of the quality of ultraviolet wavelengths and of the results obtained at the seashore, at sea level inland and in the mountains, Strandberg of the Finsen Institute believes that energy of wavelengths 3,130 angstroms and longer is the region of influence in the treatment of extrapulmonary tuberculosis. Therefore, if one is forced to use artificial energy instead of sunlight, one should choose a type of lamp which, like the sun, exhibits a continuous spectrum and possesses the greatest number of blue, violet and longer, rather than shorter, ultraviolet rays, as well as luminous and near infra-red rays. Phelps at New Haven agrees with Strandberg, but his method of demonstration did not exclude the presence and action of wavelengths shorter than 3,130 angstroms.

Bernhard, at St. Moritz, in the treatment of wounds of all sorts, uses sunlight as such, without concentrating the ultraviolet or filtering out the infra-red. He firmly believes that the benefits observed are due to the penetrating wavelengths (between the green-yellow and shorter infra-red). This is borne out by the poor results on wound healing exerted by "ultraviolet rays" emitted by a mercury vapor arc in quartz.

It has been abundantly demonstrated that the luminous and infra-red rays emitted by tungsten lamps or parlor or bathroom electric heaters are of value in conditions requiring deep action, as in the relief of pain in sprains, fractures, pulled tendons, bruised muscles, and so on, rather than the ultraviolet.

It is clear that under different conditions all parts of the radiant energy spectrum will yield results, if particular conditions demand the wavelengths a particular source emits strongly. But clinicians interested in this branch of physical therapy should know what they are doing, what wavelengths they are using, the total intensity of the energy emitted, and its percentage spectral distribution. This they should do in preference to describing as "ultraviolet" the total radiation from a lamp, of inconsiderately ascribing to the "ultraviolet" all the effects produced, and of speaking of all sources of radiant energy as "ultraviolet" sources or generators, when they emit at the same time much greater quantities of luminous and infra-red rays.

For therapeutic purposes the sun, the mercury vapor arc in quartz and the flaming carbon arc burning cored carbons filled with mixtures of carbon dust and metals have been the only ones of practical importance. The "Sunlight" lamps or "Sunlamps" developed by the General Electric Company are a combination of a mercury vapor arc in special ultraviolet transmitting glass bulbs (Corex D) and a tungsten arc. At the bottom of the glass bulb is a little pool of mercury. When the lamp is turned on, a V-shaped tungsten filament glows and the heat vaporizes the mercury so that an arc forms between two tungsten electrodes. Eighty-one and eight-tenths per cent of the energy comes from the electrodes,

1.7 per cent from the filament and the remainder from the arc.

The General Electric Mazda Sunlight Lamp S-2 is smaller and less expensive than the S-1. Its ultraviolet output is also somewhat less, but by exposing the skin at a shorter distance from the lamp (24 inches) the biologic effectiveness equals that of the type S-1 lamp at 30 inches.

The mercury vapor lamp used to deteriorate very rapidly, but its length of useful life has been markedly increased in recent years, so that the physician may expect a useful life of between 2,500 and 3,000 hours. The deterioration, when the lamp is properly treated, is due to changes in the quartz, making it less transparent. When the lamp is improperly operated and cleaned, the deterioration is more rapid and particularly affects the emission of the ultraviolet for which, so far as the physician is concerned, the mercury vapor lamp in quartz has been particularly developed, the ultraviolet component representing between 9 and 28 per cent of the total energy of all wavelengths emitted by the lamp.

Coblentz, Dorcas and Hughes, several years ago, made a comparison of the distribution of the radiation

*Distribution of Radiation of Various Lamps Compared with Sun*

| | 1,700-3,700A | 3,700-6,000A | 6,000-14,000A | 14,000-42,000A | 42,000-120,000A |
|---|---|---|---|---|---|
| **Sun, Washington** | | | | | |
| 5/25/26 11-12 a. m. | 4.8 | 34.5 | 38.9 | 21.4 | 0.4 |
| 6/28/26 11 a. m. | 5.0 | 35.3 | 39.5 | 19.7 | 0.5 |
| **Flagstaff** | | | | | |
| 9/30/26 1 p. m. | 5.3 | 34.6 | 37.7 | 22.0 | 0.6 |
| 10/ 4/26 11:30 a. m. | 5.0 | 35.0 | 36.9 | 22.6 | 0.6 |
| 10/16/26 1 p. m. | 5.0 | 35.4 | 36.3 | 22.7 | 0.6 |
| Quartz mercury arc 78 volts, 4 amperes, direct current | 8.5 | 9.2 | 3.2 | 20.5 | 58.6 |
| White flame C arc 12.7 mm. carbons | | | | | |
| 58 volts, 30 amperes, alternating current | 4.1 | 18.8 | 19.5 | 39.2 | 18.4 |
| 58 volts, 29 amperes, direct current | 4.0 | 17.0 | 21.0 | 33.0 | 25.0 |
| Blue flame C arc 12.7 mm. carbons | | | | | |
| 58 volts, 30 amperes, alternating current | 5.4 | 6.7 | 11.9 | 52.1 | 24.0 |
| 59 volts, 29.2 amperes, direct current | 4.4 | 7.6 | 13.4 | 52.8 | 21.8 |

of various lamps and that of the sun. The accompanying table illustrates their results.

A carbon arc lamp ("Pan-Ray" of the Atlas Electric Devices Company of Chicago), which has been in use for eight years in my laboratory, emitted when new (1926) about 1 gram calory per square centimeter per minute incident at 1 meter (70,000 microwatts). In 1928 this had diminished to 0.797 (55,790 microwatts), in 1929 to 0.747 (52,290 microwatts), in 1930 to 0.721 (50,470 microwatts), in 1931 to 0.571 (39,970 microwatts), in 1932 to 0.449 (31,430 microwatts), and in 1933 to 0.447 (31,290 microwatts). This diminution in total intensity is due to deterioration of the reflector surfaces. These values are for the "Sunshine" carbon (one-half by 12 inches) when the lamp is operated at between 25 and 28 amperes. The distribution in 1929 was 6 per cent ultraviolet (shorter than 4,000 angstroms), 31 per cent luminous (4,000 angstroms to 1.4 microns) and 63 per cent infra-red (longer than 1.4 microns); in 1933, 4 per cent ultraviolet, 35 per cent luminous and 61 per cent infra-red.

When this lamp is burning the therapeutic "C" carbons, the total energy emitted is 0.441 gram calory per square centimeter per minute (30,870 microwatts), with a distribution of 4 per cent ultraviolet, 9 per cent luminous and 87 per cent intra-red.

One of the National Carbon Company's Professional Model A-1 carbon arc lamps has been in use in my laboratory for about eighteen months. With 25 amperes flowing through the arc, the total energy emitted is 0.320 gram calory per square centimeter per minute incident at a meter (22,400 microwatts), with a distribution of 6 per cent ultraviolet, 50 per cent luminous and 44 per cent infra-red. With a Corex D screen, which eliminates by absorption the short ultraviolet and the long infra-red rays not found in sunlight, the total energy emitted is 0.287 gram calory (20,090 microwatts), and its distribution 5 per cent ultraviolet, 62 per cent luminous and 33 per cent infra-red.

When therapeutic "C" carbons are burned in this lamp the total energy emitted has a value of 0.266 gram calory (18,620 microwatts), with a distribution of 9 per cent ultraviolet, 24 per cent luminous and 67 per cent infra-red.

The point of these details is to emphasize the close similarity between the energy emitted by a carbon arc lamp, when operated on an appropriate amperage and burning "Sunshine" carbons, to sunlight. Compare the values for a Hanovia air cooled mercury lamp with a distribution (as given by the company) of 28 per cent in the ultraviolet, 20 per cent in the luminous and 52 per cent in the infra-red; and of an old Cooper Hewitt air-cooled quartz mercury lamp in my laboratory with a total energy output, when operated at between 4 and 5 amperes, of between 0.0562 and 0.0619 gram calory per square centimeter per minute incident at a meter and with a distribution of 13 per cent ultraviolet, 7 per cent luminous and 80 per cent infra-red.

In connection with the Sunlight Lamp of the General Electric Company, Taylor gives the following values for the distribution of the energy in terms of percentage of total from shortest wavelength to 7,400 angstroms: from shortest to 4,000 angstroms = 5.05; from 4,000 to 7,400 angstroms = 7.80, the remainder, or 87.15 per cent, being infra-red.

These lamps have been shown to be capable of curing rickets when weekly erythema doses were given. They were developed, however, for "dual lighting" for illumination and health. This purpose does not seem to have been realized and in my opinion never will be.

If penetrating rays are desired, there is no use to look further than a 500 watt gas-filled tungsten lamp. The total energy emitted approximates that of sunlight. The shorter wavelengths can be screened out by a sheet of red glass, and the longer by a water cell or a sheet of Corning G-392-H (heat absorbing) glass. Such a source has found usefulness in conditions in which deep action has been desired, as in sprains, fractures or bruised muscle. Similar results are obtainable with the carbon arc burning "Sunshine" carbons and using screens to cut out the ultraviolet and longer infra-red, which would produce surface action and thus limit the time during which application could be made, owing to ultraviolet erythema and the prickling, burning pain of the longer infra-red rays.

The ordinary quartz mercury arc is of the low voltage type, in which the incandescent column of mercury carries a relatively high current, amounting to 4 or more amperes, or from 400 to 600 watts in the burner. The temperature and vapor pressure are relatively high and the ultraviolet radiation is contained principally in the intense emission lines at 2,540, 2,800, 2,970, 3,020, 3,130, 3,340 and 3,650 angstroms.

The "cold quartz" mercury vapor lamp has a low vapor pressure, a low amperage (0.015) and a high potential (5,000 volts, open circuit) glow discharge. There is no great rise in the temperature of the burner, because the power consumed is small (about 75 watts in the primary of the transformer, and only about 8 to 10 watts in the lamp). About 95 per cent of the radiation of wavelengths less than and including 3,130 angstroms is emitted in the resonance line at 2,537 angstroms. Coblentz reports that in the emitted energy from a "cold quartz" orificial applicator the 2,540 angstrom line had an intrinsic intensity of 215 microwatts per square centimeter (0.00307 gram calory per square centimeter per minute) at the surface of the applicator; further, that the relative intensities of the short wavelength ultraviolet lines at 3,130, 2,970 and 2,540 angstroms were 45, 14 and 865. The total radiation of wavelengths less than and including the line at 3,130 angstroms at a distance of 25 cm. from the lamp was 186 microwatts per square centimeter (0.002657 gram calory per square centimeter per minute).

The total energy of one of the orificial applicator type lamps measured in my laboratory by a thermopile method was found to be 0.0018 gram calory per square centimeter per minute (126 microwatts per square centimeter) at a distance of 1 meter from the lamp, as compared with 0.0619 gram calory per square centimeter per minute (4,333 microwatts per square centimeter) for the old Cooper Hewitt high temperature lamp.

An important question is the minimum ultraviolet radiant flux (radiant power) that a source must emit in order to insure effective therapeutic action. The amount of ultraviolet radiation that can be applied to the body without producing a burn depends on the tolerance of the skin. This can be measured by the erythema produced, specifically a mild or "minimum perceptible erythema," or one that disappears in the course of twenty-four hours. The spectral erythemic reaction is produced only by ultraviolet rays of wavelengths shorter than about 3,150 angstroms with a maximum reaction at the wavelength 2,967 angstroms and a lesser maximum percentage in the region of 2,500 angstroms. The midday, midlatitude, sea level ultraviolet in summer sunshine with an intensity of from 80 to 90 microwatts per square centimeter produces a minimum perceptible erythema in from twenty to forty-five minutes, depending on the person. In winter the intensity is only about 20 microwatts (on the clearest days at noon) and the time is lengthened to from three to five hours. Forenoon and afternoon summer sunlight has an average intensity of 30 microwatts per square centimeter.

The intensity (radiant flux) from sources of heterogeneous ultraviolet radiation of wavelengths less than and including 3,130 angstroms, evaluated according to the spectral erythemic response curves, should not be less than the equivalent of 20 microwatts (200 ergs, 0.000285 gram calory) per square centimeter of homogeneous radiation of the wavelength of maximum erythemogenic effectiveness, which wavelength for practical purposes is taken at the emission line of mercury vapor 2,967 angstroms.

Although there is no close relationship between the spectral erythemic response and the therapeutic action of radiant energy, the erythemal reaction is taken as a criterion for judging the effectiveness of a lamp for three reasons: (*a*) It is practically the only physiologic reaction that is established with a relatively high degree of accuracy; (*b*) in the case of exposure to intense sources of ultraviolet radiation, it is a simple and practical means of preventing severe burns, and (*c*) in the case of weak sources of ultraviolet radiation it is an efficient safeguard against possible fraudulent sale of lamps that are deficient in ultraviolet radiation. The ultraviolet radiant flux emitted by the present-day "professional models" of the various kinds of therapeutic lamps greatly exceeds this specific minimum value.

Some sort of standardization of measurement and of dosage is needed in order that results may be compared. The specification may be in terms of (*a*) radiant power in microwatts per square centimeter or (*b*) total energy in ergs per square centimeter. The total energy must be ascertained by a nonselective method that can be calibrated in absolute units (thermopile and galvanometer), as must the homogeneous erythemogenic radiation of wavelength 2,967 angstroms employed as a standard. Coblentz [4] has worked out a suggestion for a unit based on the comparison between the erythema produced by measured amounts of heterogeneous ultraviolet radiation evaluated by a balanced thermocouple and filter radiometer. In this evaluation the erythema produced by a measured amount of homogeneous radiation of wavelength 2,967 angstroms is used as a standard. For the various sources of heterogeneous ultraviolet radiation of wavelengths less than and including 3,130 angstroms the erythemogenic equivalent of 20 microwatts (0.000285 gram calory) per square centimeter of homogeneous radiation of wavelength 2,967 angstroms in microwatts per square centimeter is approximately as follows: the sun at midday, midsummer, midlatitude, sea level, 91; the Mazda S-1 lamp, 80; the Mazda S-2 lamp, 93; the high temperature quartz mercury arc, 58; the so-called cold quartz mercury vapor lamp, 36; the carbon arc, from 45 to 90 (estimated, depending on electric current, kind of carbons and windows); and the Mazda CX tungsten filament lamp, 130 (estimated).

At the specified operating distance of from 2½ to 3 feet (75 to 90 cm. approximately) the ultraviolet radiant flux from these various artificial sources equals or exceeds the specified minimum values, in all cases excepting the 500 watt Mazda CX lamp. These lamps (Mazda tungsten filament) are not suitable sources of ultraviolet radiation for therapeutic purposes, although they may be used when penetration to subcutaneous regions is desired. At convenient operating distances (30 inches, or 80 cm.) they cause profuse sweating, which is an objectionable feature in general body irradiation. This can be avoided by using a source that emits a high intensity of the short wavelength ultraviolet radiation relative to the total emitted by the lamp and reflector. This permits operating the lamp at a sufficient distance from the patient and yet obtaining an effective dose of ultraviolet radiation.

It is becoming more and more evident that, aside from knowing whether a lamp emits sufficient ultraviolet energy to be of clinical value (specification of minimum intensity of ultraviolet radiation necessary to insure effective therapeutic action) and knowing about how long an irradiation with it will produce a desired degree of erythema, a dosage meter in practical heliotherapy has no value. The individual patient is the

4. Coblentz, W. W.: Ultraviolet Radiation Useful for Therapeutic Purposes, J. A. M. A. **98:** 1082 (March 26) 1932; **99:** 125 (July 9) 1932; Report to the Council on Physical Therapy on Heliotherapy Methods in Some European Sanatoriums, ibid. **100:** 410 (Feb. 11) 1933.

important consideration, how he reacts, favorably or unfavorably, and the dosage modified accordingly.

The Council on Physical Therapy accepts only the products of companies whose claims do not exceed the performance of the generators described. No lamp should be purchased either for office or for hospital use until it is ascertained whether or not it has been "Council accepted." The physician has a wide choice: carbon arcs, quartz mercury vapor lamps, both in office models and solarium or group models, "cold quartz" lamps, "sunlamps" and infra-red lamps, according to his needs and the physics of the energy emitted and the therapeutic indication.

It is not out of place to call attention again to the fact that the number of human ills and abnormalities for which radiant energy, as emitted by the sun, carbon arcs and quartz mercury vapor lamps, is specific or adjuvant is small, much smaller than the number for which claims are made by manufacturers, as well as by members of the medical profession.

Ultraviolet rays (shorter than 3,130 angstroms) are specific in the cure and prevention of rickets (infantile and adult) and infantile tetany. Such wavelengths are not always available in sunshine, and recourse to artificial sources is frequently necessary. The quartz mercury vapor lamp, the "Sunlamp" and the carbon arc (either "Sunshine" or "C" carbons) yield more than enough of these rays.

Cases of extrapulmonary tuberculosis (including lupus vulgaris) are markedly benefited by careful exposure to sunlight (Rollier at Leysin and Lausanne) or to the closest approximation to natural sunlight; viz., the energy emitted by a carbon arc lamp (Finsen Institute at Copenhagen). The benefits, I am convinced, are due not solely to ultraviolet rays, either those specific in rickets or somewhat longer, but as well to the light or luminous rays and to the heat or infra-red rays, which are so preponderatingly present in natural sunshine and carbon arc radiation. The reports of the results with the quartz mercury vapor lamp in the treatment of extrapulmonary tuberculosis are disappointing.

Natural sunlight will hasten the healing of sluggish, indolent wounds, as was demonstrated so clearly by Oskar Bernhard at St. Moritz. This effect, however, is certainly not a specific effect of short ultraviolet rays. The effect is a deep one and is brought about by wavelengths that penetrate through the epidermis and part of the dermis. The effect is an indirect one through the circulation, as Torraca demonstrated. The surface action of ultraviolet wavelengths shorter than 2,900 or of those slightly longer (up to 3,100) in large quantity is detrimental to the healing of wounds, unfavorably influencing the processes of repair. The influence is due to longer ultraviolet, luminous and infra-red rays, and so the quartz mercury vapor lamp is not indicated while natural sunshine and the energy from "Sunshine" carbons are.

Ultraviolet rays alone do not lower the blood pressure, but carbon arc radiation ("Sunshine" carbons) does—that is to say, of a certain percentage (between 60 and 70) of persons with abnormally high blood pressure. I have shown in both ambulatory and hospitalized patients that both systolic and diastolic pressure may be materially reduced (from 10 to 15 per cent) by general carbon arc irradiation, given in erythema-producing doses, not too frequently repeated, so as to avoid tanning. The "cure" is temporary, and the treatments have to be repeated, being given every ten days or two weeks in those whose pressures have been lowered by earlier more often repeated large doses (usually every fourth or fifth day).

There are many substances and proprietary preparations that have been introduced for the purpose of lowering blood pressure. As Sir Thomas Lewis puts it, none have come to be regarded as reliable or even as offering much or any prospect of benefit. Perhaps the most striking reflection on their value is the short period of popularity that each enjoys. The amount by which pressure is lowered by these remedies is not usually great and the fall is either transient or restricted to the period of the drug's administration. There is no known method of lowering pressure materially and over long periods of time; the most effective treatment is a suitably restful regimen.

I believe, because I have demonstrated it, that carbon arc radiation in large enough doses to set up an inflammatory reaction, accompanied by marked vasodilatation, not too frequently repeated, so as to avoid pigmentation, will produce a 10 to 15 per cent reduction in both systolic and diastolic pressures. The mercury vapor lamp in quartz will not do this and the effect is thus not the specific effect of ultraviolet rays but of these and, in addition, the luminous and infra-red, as emitted by "Sunshine" carbons.

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## *Committee on Foods*

THE COMMITTEE HAS AUTHORIZED PUBLICATION OF THE FOLLOWING GENERAL DECISION. RAYMOND HERTWIG, Secretary.

### ENERGY CLAIMS FOR FOODS

All foods except the simple mineral foods and water contain chemical energy available for use by the healthy body to support the many activities and life processes and incidentally to maintain temperature. This use of the term "energy" in defining the caloric energy value of foods should not be confused with the popular usage signifying the state of extreme well being, good health, vitality, strength, vigor or endurance. These conditions depend on many factors, including freedom from disease, native constitution, physical environment, good general nutrition, wholesome life habits and others. Even good nutrition, a necessity for health, requires far more than available food-energy only; all the nutritional essentials of a complete, well balanced diet, in adequate amounts, are demanded.

Food advertising should correctly inform the public of the energy values of foods in carefully chosen terms that may be properly interpreted. The distinction between the caloric and popular senses of the word "energy" must be recognized and observed.

Examples of appropriately phrased food-energy claims are: "Good source of food-energy," "High in food-energy content," "Furnishes ($x$) calories of food-energy per ounce of food," "Provides food-energy for supporting energy demands of the body for work and play," "Furnishes food-energy for replenishing the energy losses of any physical work." Misinformative uses not correctly interpretable by the public and fostering deceptive advertising are exemplified by the statements: "Energy food," "Gives energy," "Furnishes energy for pep and vitality," "For quick energy," "For reviving or renewing energy." Illustrations representing vigorous muscular activity accompanying misinformative energy claims accentuate the unwarranted implications.

The terms "food value" or "nutritional value" should not be used synonymously with "food-energy value." The food or nutritional value of a food includes the vitamin, mineral, protein, fat, and other values.

## ACCEPTED FOODS

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION, AND FOR GENERAL PROMULGATION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.

RAYMOND HERTWIG, Secretary.

### CALIFORNIA PRUNES EDUCATIONAL ADVERTISING

*Sponsor.*—United Prune Growers of California, a marketing organization for 85 per cent of the prune growers of California.

*Description.*—United Prune Growers of California educational advertising for California grown prunes.

*Handling and Processing.*—Mature prune plums dropping from the tree by their own weight are conveyed to a central drying plant, immersed in boiling water or alkali solution (1 pound of sodium hydroxide to 20 gallons of water) for fifteen seconds to crack the skin to facilitate drying. The alkali is removed by water sprays. The fruit is dried on wooden trays in the sun for from five to ten days or in dehydraters for twenty-four hours. About 30 per cent of the harvest is dried by the latter method. The partially dried prunes are allowed to "sweat" in bins to equalize their moisture content and are then sent to central packing houses, where they are cleaned by hot water sprays, passed slowly through nearly boiling water, shaken to remove adhering water, inspected by gloved workers, and automatically or semiautomatically packed in boxes and paper or cellophane cartons or bags, cooled and shipped. The fruit retains a temperature of over 63 C. for not less than five hours after the heating.

*Analysis* (submitted).—

| | per cent |
|---|---|
| Pits (per cent of entire prune) | 14.9 |
| (Representative analysis of flesh of prunes from three main growing sections) | |
| Moisture | 18.4 |
| Total solids | 81.6 |
| Water soluble solids | 78.0 |
| Ash | 2.2 |
| Alkalinity of water soluble ash (cc. N-acid per 100 grams prune flesh) | 20.5 |
| Alkalinity of acid soluble ash (same) | 7.3 |
| Protein (N × 6.25) | 2.8 |
| Reducing sugars minus dextrose | 44.3 |
| Dextrose [1] | 29.7 |
| Levulose by difference | 14.6 |
| Sucrose | 2.2 |
| Starch [2] | 1.0 |
| Dextrin [2] | negligible |
| Pentosans | 2.7 |
| Hemicellulose [2] | 14.6 |
| Pectic acid | 1.3 |
| Cellulose [3] | 3.9 |
| Lignin [4] | 5.1 |
| Crude fiber | 1.8 |
| Total acid as citric acid | 1.2 |
| Calcium (Ca) | 0.06 |
| Chlorine (Cl) | 0.03 |
| Copper (Cu) | 0.0003 |
| Iron (Fe) | 0.004 |
| Magnesium (Mg) | 0.05 |
| Manganese (Mn) | 0.0005 |
| Phosphorus (P) | 0.10 |
| Potassium (K) | 0.91 |
| Sodium (Na) | 0.07 |
| Sulphur (S) | 0.02 |
| Potential alkalinity (excess base forming elements in terms of cc. normal alkali per 100 grams prune flesh) [5] | 24 |

*Calories.*—3.1 per gram of flesh; 88 per ounce of flesh.

*Vitamins.*—500 Sherman units of vitamin A, 22 Sherman units of vitamin B and 80 Sherman units of vitamin G respectively per ounce.

*Claims of Sponsor.*—California prunes are laxative, owing to bulk and certain natural extractives that stimulate intestinal activity. Among the outstanding fruits richest in iron. An excellent source of quickly available food energy owing to the high content of readily assimilable sugars. Recent biologic tests show that the addition of 200 Gm. (eighteen prunes) per day to the usual diet has no effect on the alkali reserve of the body except to narrow normal variation.

1. Lothrop and Holms: Indust. & Engin. Chem. Anal. Ed. **3**: 334, 1931.
2. Leach, A. E.: Food Inspection and Analysis, revised ed., New York, John Wiley and Sons, Inc., 1920.
3. Dore, W. H.: Indust. & Engin. Chem. **12**: 20, 1920.
4. Morrow, C. A.: Biochemistry Laboratory Methods, New York, John Wiley and Sons, Inc., 1927.
5. Sherman and Gettler: J. Biol. Chem. **11**: 323, 1912.

### IRRADIATED VITAMIN D PASTEURIZED MILK

*Distributors.*—1. Carlson-Frink Company, Denver. 2. Steffen's Dairy Products, Oklahoma City, subsidiary of Southwest Utility Dairy Products Company. 3. Ira Wilson & Sons Dairy Company, Detroit.

*Description.*—Bottled pasteurized vitamin D milk irradiated with ultraviolet rays (patent No. 1,680,818).

*Preparation.*—The milk complies with legal requirements and is pasteurized by the standard holding method. For description of irradiation see THE JOURNAL, Oct. 7, 1933, page 1155. Cherry-Burrell equipment is used.

*Vitamins.*—Clinical investigation shows this milk to be a reliable antirachitic agent if the proper amount is used. Contains 135 U. S. P. X (Revised, 1934) vitamin D units per quart.

*Claims of Distributor.*—Irradiated antirachitic pasteurized milk having otherwise the flavor and food values of usual pasteurized milk.

### FRANKFORD BRAND TOMATO JUICE

*Distributor.*—Frankford Grocery Company, Frankford, Pa.

*Packer.*—American Packing Corporation, Evansville, Ind.

*Description.*—Canned tomato juice with added salt; retains in high degree the natural vitamin content; the same as the accepted Triple AAA Brand Pure Tomato Juice (THE JOURNAL, July 2, 1932, p. 35).

### "THE STORY OF SALMON" PROMOTIONAL ADVERTISING

*Sponsor.*—Department of Home Economics, American Can Company, New York.

The purpose of the department is to distribute interesting and factual material on various canned foods.

*Advertising.*—The booklet "The Story of Salmon" discusses the natural history, conservation and canning of salmon as well as the nutritive value of canned salmon.

### SILVER TIP BRAND PANCAKE TABLE SYRUP
### SWEETHEART PANCAKE TABLE SYRUP

*Manufacturer.*—D. B. Scully Syrup Company, Chicago.

*Description.*—A table syrup; corn syrup flavored with refiners' syrup. The same as Banner Blue Corn Syrup with Cane Flavor (THE JOURNAL, March 5, 1932, p. 817).

### MACY'S BABY FOODS

### STRAINED APRICOTS
(ADDED SUGAR AND SULPHUR DIOXIDE)

### STRAINED CARROTS, GREEN BEANS, PEAS, SPINACH, TOMATOES AND VEGETABLE SOUP
(SEASONED WITH SALT)

### STRAINED PRUNES

*Distributor.*—R. H. Macy & Company, Inc., New York.

*Packer.*—Stokely Bros. & Company, Indianapolis.

*Description.*—Respectively strained apricots (added sugar and sulphur dioxide), carrots, green beans, peas, spinach, tomatoes and vegetable soup (all seasoned with salt), and prunes; prepared by methods efficient for retention in high degree of the natural mineral and vitamin values. The same as Stokely's for Baby: Specially Prepared Strained Vegetables and Fruits (THE JOURNAL, May 26, 1934, p. 1762; May 26, 1934, p. 1763; June 2, 1934, p. 1851; June 9, 1934, p. 1943; June 30, 1934, p. 2186; July 7, 1934, p. 29; July 14, 1934, p. 110; July 21, 1934, p. 189).

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SATURDAY, NOVEMBER 10, 1934

## COMMITTEE ON ECONOMIC SECURITY

Last June, as was pointed out in a previous editorial in THE JOURNAL,[1] President Roosevelt created a committee on economic security to look into plans and advise prospective legislation that will provide people with decent homes and productive work and "safeguard them against misfortunes which cannot be wholly eliminated in this man-made world of ours." The committee included the Secretaries of Labor, the Treasury and Agriculture, the Attorney-General and the Federal Emergency Relief Administrator. This committee established a staff and selected as secretary and executive director Edwin E. Witte, a labor economist long associated with the industrial commission of the state of Wisconsin. The committee set up a technical board of twenty persons in the government service with special knowledge of various phases of economic security and also established a staff of specialists to look into different aspects of the subject.

In a bulletin for the press, just issued, it is pointed out that there is contemplated an advisory council to be named by the President. This council is to be composed of representative citizens who will advise on broad general policies. A special medical advisory committee is also to be appointed. In its first bulletin the Committee on Economic Security said, "Following the approach outlined by the President, the Committee is trying to draw up a comprehensive program which will give protection to the individual from all the vicissitudes and hazards of modern life — unemployment, accident, sickness, invalidity, old age, and premature death." The report of the committee is due to be made to the President on December 1 and will not be made public until released by the President.

Following the publication of the editorial that appeared in THE JOURNAL, a statement was received from Miss Perkins to the effect that a group of distinguished physicians would be constituted as an advisory board in the field of medicine. In a recent statement Miss Perkins announces that the medical advisory committee will consist of eleven eminent physicians and surgeons from all parts of the country, including the presidents of the three principal national organizations. Other advisory committees are to be created in dentistry, hospital management and public health. Pursuant to the receipt of the letter from Miss Perkins, the chairman of the Board of Trustees of the American Medical Association offered to the Committee on Economic Security the information assembled by the Bureau of Medical Economics of the American Medical Association. In the bulletin just issued by the committee it is pointed out that the Committee on Economic Security plans to consult with Dr. R. G. Leland, director of the Bureau of Medical Economics of the Association, and that it welcomes constructive suggestions from any one for meeting the economic problems arising from illness in families with low incomes.

Edgar Sydenstricker, chief statistician of the United States Public Health Service and director of public health activities for the Milbank Memorial Fund, has been placed in charge of the studies which it is hoped will yield "the best possible means for providing adequate medical care for those who are without means." It will be remembered that Mr. Sydenstricker as a member of the Committee on the Costs of Medical Care brought in an independent minority report in which he pointed out that the recommendations of the majority and the minority did not, in his opinion, go far enough. It will be remembered also that at the meeting of the American Academy of Political and Social Science, held in Philadelphia last February, Mr. Sydenstricker presented the following pragmatic approach to the problem:

> There is, of course, no one solution. It seems to me that the needs of the situation must be met by a combination of methods. Those who compose our well-to-do class can continue to purchase the medical care to which they are accustomed and the physicians who serve them can reap the benefits of an economic system which permits the concentration of purchasing power within that class. I am not here to argue for or against the existence of such a class; that question is outside of the bounds of our discussion. We accept the fact, so far as medical care is concerned, as a condition. Those who are too poor to pay for medical care must be *given* medical care; the only change in the present situation would be the payment, on an adequate basis, of physicians and others for rendering good medical care to this unfortunate class. For the most expensive services—the treatment of those afflicted with mental diseases, tuberculosis, cancer, orthopedic defects, the impairments resulting from poliomyelitis and the like—the public must assume an increasing responsibility. But the great majority of people—those who earn their livelihood in the American way of living, who want to pay for their medical care—are not in a position to budget the unpredictable costs of medical care. In almost every other unpredictable contingency the method of insurance has been applied with success in our own country. In almost every other country this method of distributing costs has been applied in a partial way to sickness. We should go beyond the health insurance systems of Great Britain and Europe which provide medical care to employed individuals only, and we should go further than to provide public medical service for infants, children, and mothers, or for tuberculosis and mental diseases. All kinds of medical care, at home or in institutions, should be provided;

1. The Administration Studies Social Insurance, editorial, J. A. M. A. **103**: 609 (Aug. 25) 1934.

and those who receive this care should include not merely those who are employed but all persons and their families having incomes below an amount sufficient to purchase medical services in any contingency. We should leave cash benefits during sickness to be taken care of by unemployment or by commercial insurance. No proprietary or profit-making agencies should be included and no independent intermediary between the potential patient and medical agencies should be permitted. In such a program the maintenance of the physician's professional freedom is of cardinal importance; adequate remuneration of all who render medical service is necessary, and the promotion of higher quality of medical care, the professional administration of professional personnel and activities, the maintenance of the private relationship between physician and patient, and the patient's free choice of physician are obviously essential.

We are informed that Dr. Walter Bierring, president of the American Medical Association, Dr. James Alexander Miller, president of the American College of Physicians, and Dr. Robert B. Greenough, president of the American College of Surgeons, have accepted positions on the medical advisory committee and that a conference of the various advisory bodies will be held in Washington on November 14 and 15. Dr. Olin West, secretary of the Association, has been asked to attend this conference. It should be borne in mind that the staff headed by Mr. Witte, the technical consultants and the advisory groups will eventually consummate their efforts in reports and plans which are to be turned over to the Committee on Economic Security and that this committee will then give to the President its suggestions as to how economic security is to be provided for those of our population who are said to require it. Presumably there will eventually be proposed legislation on which hearings will be held by Congress in the usual manner. Physicians should be aware of the various phases of this matter. The various bureaus and officers of the Association, including the Board of Trustees, are in intimate touch with the activities now under way and are doing their best to make certain that the point of view of organized medicine is adequately presented.

## DISEASE AS A MENTAL STIMULUS

The relation of bodily disease to the character and nature of mental activity is always an interesting subject for study and speculation. The neuroses, the psychoneuroses, the hysterias and their connection with physical ills provide a ceaseless flow of professional literature. The long list of successful invalids suggests the possible mental stimulus of disease. Perhaps her physical frailty inspired Elizabeth Barrett Browning. Robert Louis Stevenson "suffered from infancy from great fragility of health" [1] and later developed tuberculosis. Sydenham, whose treatise on gout is such a masterpiece, wrote it probably because he had it himself. In such instances one may postulate the physical condition as a mental stimulant. The effect of the development of dementia paralytica on the writing of de Maupassant would in itself be an interesting study. When viewed statistically, however, it is questionable whether physical or mental illness is more frequent in men of genius than in the population at large. Thus Hart [2] has drawn up a list of 100 representative geniuses and found nine who, at one time or another, showed psychotic or psychopathic traits and thirty-three who suffered at some period of their lives with ill health. Such proportions probably would not differ materially from those of the general population at the times when these geniuses lived. Hunger also, as a bodily discomfort similar to disease, has been discussed as a possible mental stimulant.[3] Reed cites Goldsmith as an example and states that, "among the litterateurs of the past, we find numerous instances, too numerous to be accidental, in which the work which brought renown was done during a period of hardship." Financial hardship other than absolute hunger can produce this urge, as witnessed by the prodigious literary activity of Scott under conditions of financial stress. On the other hand, Hart [2] found that practically half of his 100 men of genius were economically secure all their lives and 77 per cent either were always secure or attained security. Such economic comfort must be far above that of the people as a whole.

Departing from the individual, what has been the effect of disease on the course of civilization? Granting the probability that human mental capacity has not changed materially in the last thirty thousand years, what effect can disease have had in racial development? Has natural selection by disease eliminated the mentally unfit? This seems scarcely likely in view of the present statistics. Certainly disease, especially epidemics, has influenced the geographic distribution of many peoples and hence their history.[4] The fact is certain, the exact manner uncertain. Some diseases have undermined the abilities of whole peoples, others have driven people to greater activity or to lands of better opportunity. The frequent decimations of population resulting from disease may have either delayed the advance of civilization or stimulated the remaining people to greater effort than had been necessary before.

This possible stimulating effect of disease on the collective growth of civilization has been the subject of a recent address.[5] According to Pusey it is the need to surmount the difficulties of life that has been the spur that has urged man on to mental as well as physical effort. The elemental stimuli to progress are relatively few — hunger, sex, social propensity, vanity, injuries, disease, and danger from beasts and men and from the elements and natural hazards. Of these, few have more constantly prodded man in his progress than the injuries, pains and illnesses that have beset him.

1. Encyclopedia Britannica: Robert Louis Stevenson.

2. Hart, H. H.: The Unhappiness of Genius, J. Nerv. & Ment. Dis. **80**: 410 (Oct.) 1934.

3. Reed, C. B.: The Literary Value of Hunger, Proc. Inst. Med. Chicago **3**: 133 (No. 2) 1921.

4. Dempster, J. H.: Disease as a Factor Influencing History, J. Michigan M. Soc. **33**: 146 (March) 1934.

5. Pusey, W. A.: Disease, Gadfly of the Mind, Brit. J. Dermat. & Syph. **46**: 341 (Aug.-Sept.) 1934.

Thus from Egypt and Babylonia to Greece, from Imhotep to Hippocrates, medicine is found to be one of the chief concerns of the mind. Pusey quotes Heidel as saying "It is not mere chance that Aristotle in this connection draws most of his illustrations from the field of medicine. . . . The extraordinary frequency of their [the Greeks'] appeals to medical practice in illustrations of scientific procedures . . . justifies the assumption that medicine along with mathematics afforded the best examples of science in the fifth and fourth centuries, B. C." Skin disease and dermatology, according to Pusey, can allocate to themselves much of this credit, for, from the beginning of history, they have constituted one of the major interests of medicine. The great epidemic of leprosy in Europe, which began about 500 A. D., reached its height in the Crusades and died out in the sixteenth century, and bubonic plague were the worst afflictions of that plague-ridden period. Leprosy had two useful effects on the growth of medicine during this time. It was responsible for the development of hospitals and nursing, and it placed a new emphasis on the objective study of disease. In the development of knowledge of histology, contagion, bacteriology, infection, immunity, allergy and metabolism, skin diseases have played a prominent part.

Are these considerations an idle speculation? The difficulties besetting the path of individual advance and comfort have always challenged the ingenuity of mankind. Disease and want still oppress vast numbers and there is no reason to believe that the challenge will not again be met successfully.

## RESISTANCE OF THE THYROID TO STIMULATING SUBSTANCES

In a recent discussion of antihormones,[1] the possible relation of these substances to the clinical use of glandular products was considered. The demonstration by Collip and his co-workers that circulating antibodies may be produced by the injection of various gland stimulating principles indicated the necessity for great caution in the use of endocrine preparations in patients. A subsequent publication by Loeb[2] of Washington University emphasizes further the complexity of the problem. He points out that the development of resistance in the thyroid to various stimulating substances is dependent not alone on the production of antihormones in body fluids; factors apparently within the gland itself appear also to play a large part in this phenomenon. Following the injection of a thyroid stimulating preparation, the rate of mitotic proliferation of the cells in the thyroid of the guinea-pig increases to a maximum in a few days and then decreases, presumably before sufficient neutralizing substance can be present in the blood to account for this change.

Histologic changes in the thyroid similar to those produced by the thyroid stimulating factor of the pituitary, but less intense, may occur following partial thyroidectomy and administration of iodide. The time relationship of the changes in rates of cellular proliferation are also similar in the two cases. Loeb believes that it is improbable that this reaction could be due to the development of circulating antibodies against iodide. Further, it is a general principle in endocrinology that increase in concentration of the product of a gland tends to suppress further secretion of that substance by the gland. This is true of the thyroid also: administration of thyroid hormone depresses the activity of the organ. Thus it appears that development of a refractory state in the presence of stimulating substances may result from the composite action of a number of factors.

The St. Louis investigator suggests that the development of antihormones may result from the presence of protein in the pituitary extracts employed from which the active fraction of the molecule has not been separated. The antibodies produced would therefore act not against the hormone itself but against the foreign protein introduced with it. While this may well occur, this thesis does not account for the fact that, as observed by Collip and Anderson,[3] a mixture of the thyroid stimulating factor and a neutralizing serum not only does not increase the metabolic rate of the animal into which it is injected but may actually decrease it. This seems to indicate that the serum actually inactivates some of the thyroid stimulating principle of the animal into which it is injected. Furthermore, Anderson and Collip[4] have shown that the pituitary glands of animals which have become resistant to thyrotropic hormone following its prolonged injection are lacking in this factor. While, as Loeb suggests, there may be other plausible explanations of these phenomena, the problem will not be settled unless and until it is found possible to separate the active principle from specific proteins.

It is not yet known where the circulating antibodies to gland stimulating hormones are produced in the body. The antithyrotropic factor apparently is not produced in the pituitary, as Anderson and Collip have shown that it may be developed in the absence of this gland. It would be important to know whether the antihormone to the thyroid stimulating factor can be developed in a totally thyroidectomized animal. The cellular mechanism presented by Loeb appears to be the fundamental one; the production of neutralizing substances in the blood stream is probably a secondary factor much as this occurs in immunity to disease.

It is too early to speculate as to the ultimate significance of these observations. The work of Loeb and of Collip and their co-workers demonstrates further the

1. Antihormones, editorial, J. A. M. A. **103**: 492 (Aug. 18) 1934.
2. Loeb, Leo: Mechanisms in the Development of an Active Resistance to the Effects of Substances Stimulating the Thyroid Gland of the Guinea-Pig, Science **80**: 252 (Sept. 14) 1934.
3. Collip, J. B., and Anderson, E. M.: The Production of a Serum Inhibitory to the Thyrotropic Hormone, Lancet **1**: 76 (Jan. 13) 1934.
4. Anderson, E. M., and Collip, J. B.: Studies on the Physiology of the Thyreotropic Hormone of the Anterior Pituitary, J. Physiol. **82**: 11 (Aug.) 1934.

bewildering complexity of endocrine interrelationships. Increasing knowledge of this subject reveals more and more the hazard entailed in clinical application of recent contributions in this field.

## Current Comment

### HOSPITALIZATION OF THE MENTALLY ILL

Members of the House of Delegates and others have been solicited by Dr. John M. Grimes to purchase a book that he has printed purporting to contain the results of the study recently made by the Council on Medical Education and Hospitals of the hospitalization of the mentally ill in the United States. Such individual use of the Council's material is, of course, wholly unauthorized. A report prepared by Dr. Grimes when he was employed by the Association was not published because in the opinion of the Council and an advisory committee of psychiatrists and neurologists his conclusions were not supported by the evidence presented. Two partial reports that have already been published will be supplemented when further studies have been completed.

### THE METRIC EQUIVALENT OF THE TEASPOON

Although efforts have been made to introduce the use of the accurate graduated medicine glass for the measurement of liquid medicines, most people seem to prefer to take medicine from the teaspoon. For a long time it has been recognized that the present equivalent of a teaspoon is not a universal standard of measurement. Originally the teaspoon was considered the equivalent of the fluidrachm, which is about 4 cc.; this has been generally accepted since the metric system became official. This is, Nitardy says, an incorrect equivalent even though it has been adopted by the United States Pharmacopeia. Attempts have been made several times to have adopted the more nearly correct equivalent of 5 cc. The need for a more accurate equivalent has been repeatedly shown. Wilbert[1] long ago found that the teaspoonful dose as measured with the same spoon by different people varied from 3 to 7 cc. The capacities of various teaspoons as measured by Arny[2] ranged from 3.8 to 7.8 cc. More recently Adams[3] showed that the teaspoons of four different makes delivered amounts varying from 4.22 to 7.39 cc. The average content of a teaspoon in Europe is recognized as 5 cc. by the pharmacopeias of several countries. The British pharmacopeia does not give any capacity for a teaspoon. Nitardy[4] determined the capacity of a European teaspoon that was more than a hundred years old and found it to be 4.4 cc. Since the average teaspoon obviously holds more than 4 cc., an effort should again be made to have a more nearly correct metric equivalent for the average teaspoon recognized in the United States Pharmacopeia.

1. Wilbert, M. I.: Am. J. Pharm. **74**: 120, 1902.
2. Arny, H. V.: J. Am. Pharm. A. **6**: 1056, 1917.
3. Adams, J. L.: Bull. Pharm. **38**: 17, 1924; Year Book Am. Pharm. A. **13**: 74, 1924.
4. Nitardy, F. W.: How Much Is a Teaspoonful? J. Am. Pharm. A. **23**: 813 (Aug.) 1934.

## Association News

### MEDICAL BROADCASTS

#### Columbia Broadcasting System

The American Medical Association broadcasts on a western network of the Columbia Broadcasting System each Thursday afternoon on the Educational Forum from 4:30 to 4:45, central standard time. The next two broadcasts will be delivered by Dr. W. W. Bauer. The titles will be as follows:

November 15. The Health Audit.
November 22. Eat, Drink and Be Merry.
November 29. Holiday. No broadcast.

#### National Broadcasting Company

The American Medical Association broadcasts under the title "Your Health" on a Blue network of the National Broadcasting Company each Tuesday afternoon from 4 to 4:15, central standard time. The next three broadcasts will be as follows:

November 13. Does Medicine Cost Too Much? Morris Fishbein, M.D.
November 20. The Doctor of Tomorrow, W. W. Bauer, M.D.
November 27 Dollars and Disease, Morris Fishbein, M.D.

### THE ATLANTIC CITY SESSION

#### Twenty-First Annual Tournament of the American Medical Golfing Association

Dr. Walt P. Conaway, Altantic City, has been chosen chairman of the committee on golf for the annual session of the American Medical Association in Atlantic City in June 1935. The American Medical Golfing Association will hold its twenty-first annual tournament at the Northfield Country Club Monday, June 10. Dr. John P. Loudon, Yakima, Wash., is the present champion of the association, having won the Will Walter Trophy at Cleveland last June, with a score of 152 for thirty-six holes against a field of 185 players.

## Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

### ARKANSAS

**District Meeting.**—Dr. Jasper T. Matthews, Heber Springs, was elected president of the Second District Medical Society in Batesville, October 10; Dr. Paul H. Jeffery, Bethesda, vice president, and Dr. Oscar J. T. Johnston, Batesville, secretary. Speakers at this session included Drs. Fergus O. Mahony, El Dorado, "Present-Day Trend in Medicine"; Edward Clay Mitchell, Memphis, "Upper Respiratory Tract Infections in Children"; Joseph F. Shuffield, Little Rock, "Principles in Treating Some of the Common Fractures," and Herbert H. McAdams, Jonesboro, "Fibroid Tumors of the Uterus." The next meeting will be held in Batesville, April 8, 1935.

### CALIFORNIA

**Society News.**—Speakers before the Alameda County Medical Association, October 15, were members of the surgical staff of Alameda County Hospital, Oakland: Drs. Theodore C. Lawson, "Traumatic Surgery"; Frank H. Bowles, "Anomalies of the Breast," and Sumner Everingham, "Fascial Repair in Hernia."

**Personal.**—Dr. Henry O. Howitt, San Rafael, has been appointed health officer of Marin County to succeed the late Dr. John H. Kuser.——Dr. Nazareth J. Crisp has been named city health officer of Benicia, succeeding the late Dr. Philip B. Fry.——Following her resignation as medical adviser to women and director of women's physical education at Stanford University, Palo Alto, Dr. Bertha S. S. Dyment is engaged in private practice.

**Obstetric Meeting.**—The Pacific Coast Society of Obstetrics and Gynecology will meet at Del Monte, November 21-24,

under the presidency of Dr. Lyle G. McNeile, Los Angeles. The following program will be presented:

Dr. Karl L. Schaupp, San Francisco, A Study of Prenatal Care from Two Five Year Periods at San Francisco Hospital.
Dr. Albert L. Mathieu, Portland, The Early Diagnosis of Chorio-Epithelioma.
Dr. Albert V. Pettit, San Francisco, Repair of Pelvic Floor.
Dr. Clarence A. DePuy, Oakland, Subarachnoid Injection of Alcohol for the Relief of Pain.
Dr. John A. Sperry, San Francisco, Uterine Fistulas.
Dr. Henry A. Stephenson, San Francisco, Critical Analysis of Maternal Mortality in San Francisco Hospitals.
Dr. Thomas F. Wier, San Diego, Pituitrin and Narcosis in Labor.
Dr. Frank C. Ainley, Los Angeles, Vomiting in Pregnancy.
Dr. Norman H. Williams, Los Angeles, The Use of X-Rays in Obstetrics.
Dr. Emil J. Krahulik, Los Angeles, Rupture of the Membranes Before the Onset of Labor.

## DISTRICT OF COLUMBIA

**Army Lectures.**—October 15 marked the opening of the monthly lectures to which the medical department of the U. S. Army invites the medical and dental professions of the district. Lieut. Col. Sidney L. Chappell discussed "Brain Tumors, with Especial Reference to Encephalography as a Diagnostic Procedure," and Major Ira F. Peak, "Treatment of Syphilis of the Central Nervous System." This series of lectures will continue until May.

**University News.**—Surg. Gen. Robert U. Patterson, U. S. Army, gave the Smith-Reed-Russell lecture for October at the George Washington University School of Medicine, on "The History of Yellow and Typhoid Fevers in the U. S. Army." The annual banquet of the society was held October 23, and addresses were given by Dr. Charles Wardell Stiles of the U. S. Public Health Service and Henry B. Ward, LL.D., permanent secretary, American Association for the Advancement of Science, on "History of Hookworm Disease in the New World" and "Salmon Psychology," respectively.

## GEORGIA

**Society News.**—Speakers before the Seventh District Medical Society at Coosa Country Club near Rome, September 26, included Drs. Evan O. Shellhorse, Dalton, on "Treatment of Infantile Diarrhea with Raw Apples," and James S. McLester, Birmingham, Ala., President-Elect of the American Medical Association, "Problems Relating to Vitamin Deficiency."——Among others, Dr. Tom V. Willis, Brunswick, addressed the Eighth District Medical Society at Waycross, October 9, on chronic malaria.——Drs. James L. Campbell and James E. Paullin, both of Atlanta, presented papers before the joint meeting of the Ninth District Medical Society and the Hall County Medical Society, September 19, on cancer and rheumatoid arthritis, respectively.

## ILLINOIS

**Personal.**—Dr. and Mrs. Henry J. Heusinkveld, Fulton, observed their fiftieth wedding anniversary, October 1.——Dr. James J. Walsh, Camp Custer, Mich., has been named head of the medical department of the Veterans' Administration Facility at Danville, succeeding Dr. Aldine E. Morgan, who is being transferred to Oregon.

### Chicago

**Grant for Biologic Research.**—The Rockefeller Foundation has made a grant of $50,000 to the University of Chicago to carry on biologic research. This is an increase over the annual grant of $30,000 which the foundation has given to the university for the last five years. The additional $20,000 will be used to cover the expenses of the sex research program, which until this year has been financed by the committee on research in problems of sex of the National Research Council.

**Dr. De Lee Awarded Medal.**—Dr. Joseph B. De Lee, founder of the Chicago Lying-In Hospital, was presented with the Jesse L. Rosenberger Medal by the University of Chicago, October 28, in "recognition of his great service to humanity and of his lifetime of untiring devotion to his profession and his widespread influence on the practice and teaching of obstetrics." The presentation was made during a celebration given by the hospital board and the Mothers' Aid Club, observing the thirtieth anniversary of the latter and the sixty-fifth birthday of Dr. De Lee. A graduate of Northwestern University School of Medicine, 1891, Dr. De Lee is professor of obstetrics and gynecology at the Division of Biological Sciences, University of Chicago. In 1895 he founded the Chicago Lying-In Hospital, which, since 1927, has been affiliated with the University of Chicago. Formally dedicated in 1931, the building cost $1,900,000 and has a capacity of 157 beds.

**Society News.**—Dr. Achille Mario Dogliotti, professor of surgery, Royal University of Turin, Italy, addressed the Italian Academy of Medicine of Chicago and the staff of the American Hospital, October 22, on "Ventriculography" and "Treatment of Facial Spasm."——At a meeting of the Chicago Surgical Society, November 2, speakers included Drs. William F. Rienhoff Jr., Baltimore, on "Total and Partial Pneumonectomy," and Fremont Chandler and Eric Oldberg, "Extrapyramidal Tract Section for Congenital Spasticity with Athetosis."——The Chicago Laryngological and Otological Society was addressed, November 5, by Drs. Andrew C. Ivy on "Physiology of the Labyrinth"; Sherman L. Shapiro, "Pseudocerebellar Abscess," and Francis L. Lederer, "Hemorrhage in Lung Cancer."——Speakers before the Institute of Traumatic Surgery, November 19, will be Drs. Edson B. Fowler, Evanston, Ill., and Harry R. Hoffman on "A New Operation for Habitual Dislocation of the Shoulder" and "Traumatic Neuroses," respectively.——Carlos I. Reed, Ph.D., assistant professor of physiology, University of Illinois College of Medicine, addressed the Chicago Club for the Study of Arthritis, November 7, on "Metabolic Changes in Arthritis Patients Under Viosterol Therapy."

## INDIANA

**Medical Museum.**—Efforts are being made to establish a medical museum at Indiana University School of Medicine. Any one with old medical books, instruments or anything of interest to the medical profession who wishes to donate them to the museum should communicate with the bureau of publicity of the Indiana State Medical Association, 1021 Hume-Mansur Building, Indianapolis.

**Personal.**—Dr. Walter B. Christophel was recently elected president of the Mishawaka Chamber of Commerce.——Dr. Herman O. Seipel, formerly coroner of Porter County, has succeeded the late Dr. Harvey S. Cook as health officer of Valparaiso.——Dr. Junius L. Lambert, Brazil, has been appointed health officer of Clay County, succeeding the late Dr. William Palm.

**Survey of Handicapped Children.**—The Indiana University psychologic center of Riley Hospital, Indianapolis, will sponsor a survey in the public schools of children with physical handicaps that retard their progress. Results of the investigation will be used to map out a program of training teachers to meet the problem presented by these children, the journal of the state medical association reports. Teachers will be asked to report students who stutter, lisp or have cleft palate, delayed speech, or sensory defects such as vision and hearing.

**Society News.**—A joint meeting of the Grant County medical and dental societies, Marion, October 23, was addressed by Dr. Joseph E. Schaefer, Chicago, on "Mouth Infections and Mouth Lesions."——At a meeting of the Madison County Medical Society in Anderson, October 15, Dr. Lawrence H. Gilman, Indianapolis, discussed encephalitis.——The Elkhart County Medical Association was addressed in Elkhart, October 4, by Drs. Nelson M. Percy and David S. Beilin, Chicago, on "Gastric and Duodenal Ulcer and Carcinoma of the Stomach from Clinical, Roentgenologic and Surgical Viewpoints."——Dr. Jewett V. Reed, Indianapolis, discussed head injuries before the Gibson County Medical Society in Princeton, October 8.——Dr. Eugene Birchwood, Chicago, is giving a series of ten lectures on the interpretation of the electrocardiogram before the staff of Holy Family Hospital, LaPorte.——A symposium on rheumatic fever was presented before the Indianapolis Medical Society, October 25, by Drs. Russell R. Hippensteel, George S. Bond and Harold C. Thornton.

## KANSAS

**Society News.**—Papers were presented by Drs. John L. Lattimore and Earle G. Brown, Topeka, before a meeting of the Clay and Geary County medical societies at Junction City, September 12, on fever determination and coronary thrombosis, respectively.——At a meeting of the Harvey County Medical Society in Newton, September 3, Drs. Harold M. Glover, Newton, read a paper on "Anemias of Pregnancy" and Emmet E. Peterson, Halstead, on "The Motor Paralysis of the Larynx."——Speakers before the Southeast Kansas Medical Society in Chanute, September 13, were Drs. Clifford C. Nesselrode, Kansas City, on cancer; Howard Snyder, Winfield, spinal anesthesia; William M. Mills, Topeka, treatment of lung abscess; Warren F. Bernstorf, Pratt, treatment of tetanus; Victor E. Chesky, Halstead, the goiter heart, and Noble E. Melencamp, Dodge City, use of iodine in thyroid disease.

## LOUISIANA

**Shreveport Fall Clinic.**—The Shreveport Fall Clinic was held at Charity Hospital, November 8-9. Dr. Willis C. Campbell, Memphis, opened the session with an orthopedic clinic. Others on the program included Drs. John R. Caulk, St. Louis, who discussed prostatic surgery, and fate of the kidney in cancer of the bladder; James S. McLester, Birmingham, Ala., President-Elect, American Medical Association, newer aspects of deficiency diseases; James R. McCord, Atlanta, Ga., puerperal eclampsia and puerperal sepsis; John H. Musser, New Orleans, blood dyscrasias and observations on coronary occlusion; William D. Haggard, Nashville, Tenn., thyroid cases and cancer of the rectum, and Horton R. Casparis, Nashville, nutrition in infants and children and childhood tuberculosis. Dr. Campbell also discussed bone tumors.

**Warning to Bakers.**—The Louisiana State Board of Health has learned that some bakers consign bread and other products to retail dealers in quantities considerably in excess of their daily sales and requirements. Investigation shows that the left-over products, which are picked up the following day and returned to the bakeries, are usually stored overnight in corners or store rooms where they are subject to contamination by roaches, rats, cats and the like; consequently they become stale and unfit for use as food. In many instances an attempt is made to freshen these returned products. The state board, as a warning, points out that the return of bread and other bakery products under these conditions would constitute a violation of the state food and drug law and regulations that make it unlawful for any one to trade in or exchange products unfit for use as food. The board urges bakers to adjust their deliveries to the actual daily requirements of their retail customers in the interest of public health and to protect their dealers and distributors from being charged under the food and drug law.

## MASSACHUSETTS

**Mental Hygiene Meeting.**—The annual meeting of the Massachusetts Society for Mental Hygiene will be held at the Twentieth Century Club, Boston, November 22. Speakers will include Robert Ulrich, Dr.Phil., lecturer on comparative education at the Harvard Graduate School of Education, whose subject will be "The Influence of the New Psychology on Education."

**The Gay Lecture on Ethics.**—Dr. Arthur H. Ruggles, Providence, R. I., delivered the George W. Gay Lecture on medical ethics at Harvard Medical School, November 1. The subject of his talk was "Understanding the Individual Patient." Lectures on the care of the patient will be given November 15 and 22 by Drs. Joseph H. Pratt and Stephen Rushmore, both of Boston.

**State Hospital Opens New Unit.**—A new medical and surgical building has been opened at the Metropolitan State Hospital in Waltham. In the future, patients with mental disorders who may require either medical or surgical treatments will be transferred to the new building. The unit, which is three stories high, has fifty-four beds for men and the same number for women. In addition, twenty-two beds are available for employees.

## MICHIGAN

**Personal.**—October 11 was designated as "Dr. Hudson Day" in Merrill, in honor of Dr. James H. Hudson, who has practiced in the community for forty-four years. A banquet was held at the Rainbow Hotel and he was presented with an armchair on behalf of the community. Dr. Hudson, who is 76 years of age, graduated from the University of Michigan School of Medicine in 1883. He served as postmaster of Merrill for sixteen years.

**Tuberculosis Meeting.**—The Michigan Tuberculosis Society, the Michigan Trudeau Society and the Michigan Sanatorium Society convened in annual session in Ann Arbor, October 11. Speakers included Drs. Jabez H. Elliott of the University of Toronto Faculty of Medicine on "Tuberculosis in Children." Other physicians on the program included Drs. Bruce H. Douglas, Detroit, George L. Leslie, Howell, Russell S. Anderson, Howell, Warren E. Forsythe and John Alexander, Ann Arbor.

**Society News.**—The program of the Kalamazoo Academy of Medicine was given in conjunction with the graduate course of the Michigan State Medical Society, October 16; speakers were Drs. Carl D. Camp, Ann Arbor, "Technic and Methods of Neurologic Examination"; Robert Dieterle, Ann Arbor, "Psychotherapy in General Medical Practice," and Isaac N. La Victoire, Kalamazoo, "Malarial Treatment of Syphilis of the Central Nervous System." Dr. John M. Dorsey, Ann Arbor, conducted a neurologic clinic.——Dr. Robert Sonnenschein, Chicago, addressed the Saginaw County Medical Society at Saginaw, September 25, on "Practical Points in Otolaryngology for the General Practitioner."——Dr. William J. Cassidy, Detroit, addressed the St. Clair County Medical Society, October 2, on "Eccentricities of Splenic Disease: Treatment and Diagnosis."

## NEBRASKA

**District Meetings.**—The Seventh Councilor District Medical Society held its annual meeting at Geneva, October 18, with the following speakers, among others: Drs. Miles J. Breuer, Lincoln, on "The Nature and Treatment of Infectious Arthritis"; John M. Porter, Concordia, Kan., "Use of Blood Transfusion in General Practice," and Joseph A. Weinberg, Omaha, "Surgery of Acute and Chronic Empyema." Dr. Joseph Bixby, Geneva, president of the state medical association also made an address.——At the annual joint meeting of the ninth and tenth councilor districts of the Nebraska State Medical Association in Kearney, October 9, speakers included Drs. Wilmer D. McGrath, Grand Island, on symptoms of angina pectoris; Charles F. Moon, Omaha, practical obstetrics, and J. Stanley Welch, Lincoln, estimating the surgical risk in thyroid cases.

## NEW JERSEY

**Health at Trenton.**—Telegraphic reports to the U. S. Department of Commerce from eighty-six cities with a total population of 37 million, for the week ended October 27, indicate that the highest mortality rate (19.3) appears for Trenton, and the rate for the group of cities as a whole was 10.6. The mortality rate for Trenton for the corresponding period last year was 17.6, and for the group of cities, 10.5. The annual rate for eighty-six cities for the forty-three weeks of 1934 was 11.3 as against a rate of 10.8 for the corresponding period of the previous year. Caution should be used in the interpretation of these weekly figures, as they fluctuate widely. The fact that some cities are hospital centers for large areas outside the city limits or that they have a large Negro population may tend to increase the death rate.

## NEW YORK

**Medal for Work in Ophthalmology.**—The University of Buffalo will award its annual gold medal to the author of a work on an ophthalmologic subject. Details may be obtained by writing Dr. Harold W. Cowper, 543 Franklin Street, Buffalo.

### New York City

**Second Harvey Lecture.**—William Cumming Rose, Ph.D., professor of biochemistry, University of Illinois, Urbana, will deliver the second lecture before the Harvey Society, November 15, at the New York Academy of Medicine. His subject will be "The Significance of the Amino Acids in Nutrition."

**Pediatric Meeting.**—A regional conference of the American Academy of Pediatrics with the New England Pediatric Society, the Philadelphia Pediatric Society and the pediatric section of the New York Academy of Medicine was held at the Ambassador Hotel, October 19-20. Among the speakers were:

Dr. John A. Kolmer, Philadelphia, Vaccination in Anterior Poliomyelitis.
Dr. William E. Studdiford Jr., Birth Trauma.
Dr. Samuel T. Orton, The Acquisition of Language.
Dr. Elvira Goettsch, Treatment of Scurvy with Ascorbic Acid.
Dr. Joseph F. McCarthy, Urology in Pediatrics.
Dr. Lucy D. Porter Sutton, Persistent Auricular Fibrillation.
Dr. Marshall C. Pease Jr., Hereditary Hemophilia Treated with Theelin.
Dr. Charles Hendee Smith, Lipoid Pneumonia.

**Voluntary Hospitals Give Forty Per Cent Free Care.**—More than 40 per cent of the service rendered in 1933 by the fifty-six voluntary hospitals that make up the United Hospital Fund was given free, according to the fund's annual report. The hospitals provided 4,016,420 days of hospital care, of which 1,586,977 were free ward care; in the outpatient departments 1,794,877 visits were free out of a total of 3,951,391. The total operating expenses of the hospitals amounted to $24,996,050, toward which they received in income from patients $15,940,920 and in "miscellaneous earnings" $985,824, leaving the remainder to be made up from other sources. The average cost of caring for patients in inpatient departments for all hospitals was $5.33; for service to outpatients, 94 cents per visit. The percentage of occupancy of the 16,206 beds in the fifty-six hospitals was 69.7. The average stay in hospital for all types of institutions was 13.9; 12.8 for general and 17.3 for special hospitals. A total of 7,712 physicians exclusive of courtesy staffs served the hospitals of the fund and there were 18,834 persons employed by them during 1933.

## OHIO

**First District Meeting.**—The annual meeting of the First Councilor District of the Ohio State Medical Association will be held in Cincinnati, November 12, with Drs. James Ewing and Frank E. Adair, New York, as guests. The morning will be devoted to inspection of the cancer clinic of the Cincinnati General Hospital, with discussion of cases by the guests. In the afternoon a session will be held at the hospital with the following speakers: Drs. Robert Conard, Wilmington, "A Simple Measure of Thyroid Dysfunction"; Louis G. Herrman, Cincinnati, "Peripheral Vascular Disease"; Harold O. Lund, Middletown, "Pyelitis in Infancy and Childhood," and Harry M. E. Lowell, Hamilton, "Treatment of Thermal Burns." The district society will join the Cincinnati Academy of Medicine for an evening meeting at its headquarters, at which Dr. Ewing will speak on "Recent Advances in the Scope of Cancer," and Dr. Adair, "The Attitude of the Modern Surgeon Toward the Cancer Problem."

## PENNSYLVANIA

**Society News.**—Dr. Russell L. Haden, Cleveland, addressed the Erie County Medical Society, Erie, October 9, on "Classification and Treatment of the Anemias."——Dr. Robert S. Dinsmore Jr., Cleveland, discussed goiter at a meeting of the Berks County Medical Society, October 9.——Dr. Francis F. Borzell, Philadelphia, addressed the Schuylkill County Medical Society, Pottsville, October 9, on "Dangers of Socialized Medicine."

**Graduate Assembly in Harrisburg.**—Six speakers will present the program of a graduate assembly sponsored by the Harrisburg Academy of Medicine at the Penn-Harris Hotel, November 20, as follows:

Dr. Lewellys F. Barker, Baltimore, The Senile Patient; The Treatment of Pernicious Anemia.
Dr. John M. T. Finney, Baltimore, Extra-Abdominal Conditions Simulating Intra-Abdominal Lesions.
Dr. Roy W. Scott, Cleveland, The Heart After Forty.
Dr. Jacob Arnold Bargen, Rochester, Minn., Colitis, Its Pathologic Physiology and Management.
Dr. John F. Erdmann, New York, Tumors of the Colon.
Dr. John A. Kolmer, Philadelphia, The Etiology, Diagnosis and Treatment of Focal Infection.

### Philadelphia

**Ex-Residents' Dinner.**—The forty-eighth annual dinner of the Association of Ex-Resident and Resident Physicians of the Philadelphia General Hospital will be held, December 4, at the Philadelphia Country Club. The guest of honor will be Dr. William A. Newman Dorland, Chicago. Ex-interns are urged to send their correct addresses to the secretary, Dr. George Wilson, 133 South Thirty-Sixth Street.

**Tribute to Dr. Gleason.**—Dr. Edward B. Gleason, professor of otology, University of Pennsylvania Graduate School of Medicine, celebrated his eightieth birthday, October 13. Dr. Gleason, a native of Philadelphia, is a graduate of the Medico-Chirurgical College of Philadelphia, where he was at one time professor of otology. He is the author of textbooks in otolaryngology and has served as president of the Philadelphia Laryngological Society. He was also at one time president of the Philadelphia Common Council.

**County Society Seminars Begin.**—Dr. Esmond R. Long delivered the first lecture in the first series of postgraduate seminars sponsored by the Philadelphia County Medical Society this season, November 2. The series is a study of tuberculosis, for which Dr. Long gave the historical background. Speakers for coming meetings will be:

Dr. Morton McCutcheon, pathologic anatomy.
Dr. Joseph D. Aronson, characteristics of the various types of tubercle bacillus and the tuberculin reaction.
Dr. George A. Harrop, Baltimore, maintenance of nutrition in the tuberculous.
Harvey Dee Brown, Ph.D., public health aspects.

**Society News.**—Dr. Leonard G. Rowntree addressed the Metabolic Association of Philadelphia, October 31, on diseases of metabolism.——Dr. Alfred Gordon addressed the Medico-Legal Society of Philadelphia, October 30, on "Some Basic Principles in Nervous and Mental Breakdown."——Dr. John F. Coppolino, among others, addressed the Obstetrical Society of Philadelphia, November 1, on "Prophylaxis of Congenital Syphilis."——At a meeting of the Philadelphia Roentgen Ray Society, November 1, Dr. Oscar V. Batson and LeRoy D. Ennis, D.D.S., among others, presented a paper on "Anatomical and Roentgenological Consideration of Maxillary Sinuses."

### Pittsburgh

**State Health Day.**—The annual public health meeting under the auspices of the Allegheny County Medical Society and the General Health Council of Pittsburgh and Allegheny County in observance of Pennsylvania Health Day, was held November 8 at the Hotel Schenley. Speakers were Drs. P. Starr Pelouze, Philadelphia, and William W. Bauer, Chicago, director of the Bureau of Health and Public Instruction of the American Medical Association.

## SOUTH CAROLINA

**District Meetings.**—Among speakers who addressed the Fourth District Medical Association at Union, September 27, were Drs. William S. Fewell, Greenville, on "Heart Disease in General Practice"; Ruskin G. Anderson, Woodruff, "Bronchoscopy in Diagnosis and Treatment," and Francis P. Owings, Union, "Treatment of Cutaneous Burns."——At a meeting of the Seventh District Medical Association, Sumter, September 13, speakers on the scientific program were Drs. Addison G. Brenizer, Charlotte, N. C., on "Compression of the Spinal Cord—Its Surgery"; Robert W. McKay, Charlotte, "Urinary Obstruction in Male Infants"; Hal M. Davison, Atlanta, Ga., "Hypertension," and D. Lesesne Smith, Spartanburg, "Preventive Pediatrics." Drs. William Egleston, Hartsville, and Samuel E. Harmon, Columbia, president and president-elect, respectively, of the South Carolina Medical Association, discussed organizational and economic questions.——The Third District Medical Society held its annual meeting in Newberry, October 4, with the following speakers: Drs. James Heyward Gibbes, Columbia, on "Angina Pectoris"; LeGrand Guerry, Columbia, "Acute Abdomen"; Foster N. Martin Jr., Newberry, "Aplastic Anemia"; George Benet and Charles G. Spivey, Columbia, "Stab Wounds of the Heart." Dr. Samuel E. Harmon, Columbia, president-elect of the South Carolina Medical Association, made an address.

## TEXAS

**Meeting of Obstetricians and Gynecologists.**—Dr. Henricus J. Stander, professor of gynecology and obstetrics, Cornell University Medical School, New York, was the guest speaker at the annual meeting of the Texas Association of Obstetricians and Gynecologists at Galveston, October 6. He delivered the J. F. P. Paine Lecture on "Maternal and Fetal Mortality in the United States" and addressed a dinner session on "Teaching of Obstetrics in the United States." Dr. Ben Hill Passmore, San Antonio, was elected president.

**District Meetings.**—The Fourth District Medical Society met in Ballinger, October 15-16, with the following speakers, among others: Drs. Stirling E. Russ, San Antonio, on "Treatment of Hemorrhoids"; Arthur G. Schoch, Dallas, "Recent Advances in the Treatment of Syphilis"; Charles P. Schenck, Fort Worth, "Traumatic and Unripe Cataracts," and Homer B. Allen, Brownwood, "Skin Grafting."——Among speakers at a meeting of the Northwest Texas (Thirteenth) District Medical Society at Bowie, September 11, speakers included Drs. Milton H. Glover, Wichita Falls, on "Chronic Arthritis of the Spine"; Louie O. Godley, Fort Worth, "Acute Anterior Poliomyelitis"; St. Julien R. Murchison and Craig W. Munter, Fort Worth, "Adequate After-Care in Prostatectomy and Transurethral Procedures," and John W. Brown, state health officer, Austin, "Relation of the Health Department to the Medical Profession and the Duties of Each."

## WASHINGTON

**Society News.**—Drs. Albert C. Broders, Rochester, Minn., and William C. Speidel, Seattle, addressed the King County Medical Society, Seattle, November 5, on the cancer problem and on the development and present status of the transfusion of blood. Dr. William S. Middleton, Madison, Wis., addressed the society, October 15, on recent trends in medicine. Dr. Alexander H. Peacock, Seattle, showed motion pictures of a recent trip around the world.

**Survey of Mental Health Facilities.**—In accordance with a request of Governor Martin, the U. S. Public Health Service has detailed Senior Surgeon Grover A. Kempf, Washington, D. C., to make a study of mental health administration in the state. He will make detailed studies of institutions for the care of mental cases, including methods and policies of admission; of the penal and correctional system of the state, including court procedure, special clinics and provisions for temporary care and examination facilities pending trial, and of institutions dealing with delinquent and defective children, with special reference to mental hygiene problems. In addition, general studies will be made of population data, governmental organization, economic resources and fiscal policies and public and private educational policies. The scope of the survey also includes an analysis of policies affecting selection, training, appointment and tenure of office of those engaged in the care

and treatment of the mentally disordered. In the course of the investigation an analysis of the facilities and potentialities for research in nervous and mental diseases will be made.

## GENERAL

**Society News.**—Dr. William Seaman Bainbridge was elected president of the Association of Military Surgeons of the United States at the annual session at Carlisle Barracks, Pa., October 10. The program consisted principally of demonstrations of medical field equipment and maneuvers. Assistant Secretary of War Harry H. Woodring made an address. The association visited the battlefield at Gettysburg, where the latest model airplane ambulance was exhibited.——Dr. Max Biesenthal, Chicago, was elected president of the Mississippi Valley Conference on Tuberculosis at the annual session in Cedar Rapids, Iowa, September 28, Mr. Theodore J. Werle, Lansing, Mich., was named vice president and Mr. A. W. Jones, St. Louis, reelected secretary. Dr. Merlin H. Draper, Fort Wayne, was elected president of the Mississippi Valley Sanatorium Association. The joint convention of the two organizations will be held in Madison, Wis., in September 1935.——National Hearing Week was observed during the week of October 15 by organizations for the hard of hearing, with addresses before various societies, radio programs and exhibits emphasizing the importance of the conservation of hearing.——Dr. Donald C. Balfour, Rochester, Minn., was chosen president-elect of the American College of Surgeons at the annual session in Boston, October 18, and Dr. Robert B. Greenough, Boston, was installed as president. Vice presidents elected were Drs. Arthur W. Allen, Boston, and John A. Gunn, Winnipeg, Canada.

**Annual Meeting in El Paso.**—The twenty-first annual meeting and clinical conference of the Medical and Surgical Association of the Southwest will be held in El Paso, Texas, November 22-24. Guest speakers will be:

Dr. Rosco G. Leland, Chicago, director, Bureau of Medical Economics, American Medical Association, Current Problems in Medical Economics.
Dr. Holman Taylor, Fort Worth, Special Phases of Medical Economics.
Dr. John H. Musser, New Orleans, Borderline Medical and Surgical Conditions.
Dr. John R. Caulk, St. Louis, Transurethral Surgery.
Dr. George Piness, Los Angeles, Problems in Diagnosis of Gastro-Intestinal Allergy.
Dr. John de J. Pemberton, Rochester, Minn., Advances in the Diagnosis and Treatment of the Thyroid Gland.
Dr. Dudley A. Smith, San Francisco, Cancer of the Rectum and Rectosigmoid.
Dr. Harry L. Baum, Denver, Laryngotracheobronchitis.

The guests will also conduct clinics and round table discussions. Headquarters will be at the Hotel Hussman.

**Society for Tropical Medicine.**—The annual meeting of the American Society of Tropical Medicine will be held in San Antonio, Texas, November 14-16, in conjunction with the meeting of the Southern Medical Association. Papers on amebiasis will be presented by the following speakers, among others: Dr. Henry E. Meleney and William W. Frye, Ph.D., Nashville, Tenn.; Dr. Francis W. O'Connor and Constance R. Hulse, New York; Dr. George W. McCoy, U. S. Public Health Service, Washington, D. C.; Dr. Herman N. Bundesen, Chicago, and Charles A. Kofoid, D.Sc., Berkeley, Calif. Other speakers announced include:

Drs. Max Theiler and Loring Whitman, New York, Quantitative Studies of the Virus and Immune Serum Used in Vaccination Against Yellow Fever.
Dr. Thomas B. Magath, Rochester, Minn., Coccidia in Man.
Dr. Herbert C. Clark and William H. W. Komp, Panama, Further Studies of Malaria in Panama, with Reference to Control with Atabrine and Plasmochin.
Dr. Arnaldo Giovannola, Italian Institute of Public Health, Rome, Plasmodium Ovale Considered as a Medium as a Modification of Plasmodium Vivax Produced by Long Residence in the Human Host.
Dr. Hugh W. Mulligan, Indian Medical Service, Kasauli, India, The Malaria Parasites of Lower Monkeys.
Chauncey D. Leake, Ph.D., San Francisco, Principles of Chemotherapy in Relation to Tropical Medicine.

**Record Low Death Rate in 1933.**—The U. S. Bureau of the Census announces that in 1933 there were 1,342,073 deaths from all causes, representing a mortality rate of 10.7 per thousand of estimated population, the lowest since the collection of mortality statistics was begun in 1900. The admission of Texas to the death registration area last year enables the bureau to publish complete statistics for the entire population of continental United States for the first time. Of eighteen groups into which the deaths are divided, eleven show decreases in rates as compared with the previous year, five show virtually no change, and only one shows a significant increase. The death rate from diseases of the circulatory system increased from 246 per hundred thousand of population in 1932 to 249.8 for 1933. The particular disease that showed the greatest increase was diseases of the coronary arteries, which went from 14.5 in 1932 to 21.9 in 1933. The rate for 1932 was 10.8. The death rate from cancer, which has increased steadily during the past fifteen years, was temporarily halted in 1933, being 107, as compared with 107.1 for 1932. The rate for 1931 was 103.9. The group of infectious and parasitic diseases showed a decrease, chiefly attributed to a drop in the number of deaths from influenza and tuberculosis; diseases of the respiratory system had a lower death rate accounted for by a decrease in deaths from pneumonia, and diseases of the genito-urinary system revealed a decline in the number of deaths from chronic nephritis. Deaths from diseases of pregnancy, childbirth and the puerperal state also declined from 11.1 to 10.3 per hundred thousand of population in 1933. The suicide rate decreased from 17.4 in 1932 to 15.9 in 1933.

### Deaths in Other Countries

**Santiago Ramon y Cajal,** for many years professor of normal and pathologic histology at the University of Madrid; winner of the Nobel Prize in medicine in 1906 for his work on anatomy of the nervous system; honorary president of the National Academy of Medicine of Madrid; director of the laboratory for biologic investigations in the Instituto Cajal, established in his honor in 1920; honorary member of scientific bodies in many countries, including the National Academy of Sciences in the United States and the Royal Society of England; honored by many prizes and medals from scientific societies and governments; author of textbooks in histology and anatomy; died, October 18, aged 83.——**Sir Richard Havelock Charles,** for many years physician to King George and Queen Mary of England; formerly professor of anatomy and comparative anatomy at Lahore Medical College; president of the Royal Society of Tropical Medicine and Hygiene and dean of the London School of Tropical Medicine; died in London, October 28, aged 76.

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# *Government Services*

### Federal Fund for Rural Health

Health departments in rural areas will be subsidized by the U. S. Public Health Service through a fund of $1,000,000 made available by the F E R A. The funds will be disbursed through the state health departments to maintain existing full time county or district health units when local funds are insufficient to provide for adequate health service. According to the New York *Times,* the service will undertake to establish new full time rural units when local funds are inadequate to meet the entire cost, but it will not contribute to any project in which less than 50 per cent of the cost is borne by state or local authorities.

### Position for a Parasitologist

The U. S. Civil Service Commission announces an open competitive examination for the position of junior parasitologist for the Bureau of Animal Industry, Department of Agriculture. At present there is a vacancy with headquarters at Beltsville, Md., in which the department wishes to place a woman. Both men and women will be admitted to the examination, however. The duties are to conduct research in animal parasitology, and the salary will be $2,000 a year, subject to the usual deductions. Applications must be on file with the commission at Washington before November 26. Full information may be obtained from the secretary of the civil service board at the postoffice or customhouse in any city that has a postoffice of the first or second class, or from the commission at Washington, D. C.

### Internships in the Public Health Service

The U. S. Public Health Service announces that a number of internships will be available July 1, 1935, to medical students graduating in that year. There will be a number of first year internships, the salary of which is $79 per month plus quarters, subsistence and laundry, and a smaller number of second year positions with a salary of $93.25 per month plus quarters, subsistence and laundry. Applications should be addressed to the U. S. Public Health Service, Washington, D. C., and the applicant should state whether he is interested in a first or second year internship. To be eligible for the second year, students must have had one year's internship by July 1, 1935.

# Foreign Letters

## LONDON

*(From Our Regular Correspondent)*

Oct. 13, 1934.

### Report of National Health Service

In the preceding letter the annual report for 1933 on the public health by Sir George Newman, chief medical officer of the Ministry of Health, was reviewed. The main part of the report was dealt with; a section on national health insurance has been reserved for special notice. It constitutes the most reliable information on the subject. Sir George Newman points out that the insurance medical service is a branch of the public health service which is concerned with the prevention and treatment of disease as it affects the insured population. The physicians who provide the service by virtue of their opportunities for the early detection of disease in the individual form the first line of defense against communal disease. In most cases they are also the best instrument for prompt application to the individual of preventive measures. The medical service given to the insured population is vastly superior to service to the same class of people before the introduction of national health insurance and has been improved continuously since its inception.

#### THE EXTENT OF THE SERVICE

In 1933 the number of insured persons in England and Wales was 16,071,000, while the number of insurance physicians was 16,500. The total cost of medical benefit, exclusive of the cost of administration, was $44,700,000, of which $33,800,000 was expended on remuneration of physicians and $10,900,000 on medicine and appliances.

#### THE SUPERVISION OF INSURANCE PRESCRIBING

Sir George Newman points out that neither the insured nor the physicians have any pecuniary interest in the cost of medicines, which is a direct charge on the insurance funds. Therefore some form of supervision must be directed to the prevention of unnecessary expenditures. Particulars of the cost of the prescriptions of every insurance practitioner are extracted at regular intervals, and if these appear to disclose extravagance he is visited by a medical officer of the regional medical staff for the purpose of discussing whether more economical methods could not be adopted without loss of efficiency. If further action is required, the minister of health may issue a warning letter to the physician or may refer the case to the panel committee. In 1933 this committee found that unnecessary cost had been incurred in only four cases, a diminished number, for in 1928 the figure was forty-five.

#### THE QUESTION OF UNNECESSARY PRESCRIBING

The important question remains whether the general average cost of medicines is not unduly high. For several years the cost per head of the insured population has been steadily rising. Part of this is undoubtedly due to the necessity for prescribing expensive forms of treatment, such as insulin and liver extract. The suggestion is frequently made that the insured people of England are confirmed medicine drinkers. On this point it is interesting to compare Scotland, where the physicians generally never adopted the English custom of dispensing medicine to their patients, and the latter have not been induced to consider a bottle of medicine a necessary corrollary of a visit to the physician. In England, on the contrary, the physicians have for generations dispensed all medicines to the working classes. The result of this difference is that the cost of medicine for the insured in England exceeds that in Scotland by 50 per cent. Sir George Newman points out that no facts connected with the incidence of disease in the two countries account for this wide difference and no one would suggest that the standard of treatment in Scotland is lower than in England. In view of the steady increase in the cost of insurance treatment he enjoins the insurance physician to satisfy himself that every prescription is required by the patient's condition. There is no evidence that the standard of health is better in areas where the habit of taking medicine is highly developed. He finally suggests that possibly in order to ensure that due regard is paid to his advice the insurance physician supplies a bottle of medicine against his better judgment. That there is a considerable waste of public money because so many of the insured like to take medicine, for which they do not have to pay, seems beyond question. The *Lancet* suggests as a solution that the insured should be made to pay a small sum toward the cost of medicine.

#### MEDICAL CERTIFICATES AND CLAIMS FOR SICKNESS BENEFITS

Sir George Newman points out that any scheme of insurance which entitles the insured to money benefits is subject to the risk of illegitimate claims. Certificates of incapacity are not the least difficult of the physician's duties. Therefore in 1920 there was instituted a body of independent medical referees to whom doubtful cases could be referred for a second opinion. This innovation was welcomed both by the physicians and by the benefit societies. These referees play a most important part in the administration of sickness benefit. If a physician appears to have shown lack of care in the issue of certificates of incapacity, he is visited by an officer of the staff for the purpose of discussing both individual cases and difficulties in certifying generally.

### Defense Against Gas Attack on the Civilian Population

Mr. Davidson Pratt, general manager of the Association of British Chemical Manufacturers and a member of the technical committee of the disarmament conference, delivered before the Glasgow section of the Society of Chemical Industry an address entitled "The Chemist and National Defense." He said that, in spite of the Geneva protocol, defense against chemical warfare was urgent. A country with a well developed air service and a strong chemical industry had the means ready at hand for a rapidly improvised gas attack on the enemy. Gas had a devastating effect on the morale of people ignorant of its properties and uninstructed in methods of defense. A country that had not educated its public or prepared schemes of defense would be particularly vulnerable. The safest thing for the civilian population was to keep within doors as soon as an air raid warning was given. To make indoor protection as safe as possible there should be in every house, office or building a gas-proof room or rooms in which the occupants could remain until the all clear signal was given. The selection of the rooms, from the point of view both of high explosives and of gas, and the means of making them as gas proof as possible, were problems for the chemist. There would naturally be some provision of gas-proof shelters for people caught in the streets. The proposal for extensive underground shelters, proof against high explosives and gas, was feasible only to a limited extent for certain limited services, because of the enormous expense. But a limited number of such shelters could be provided by peacetime construction of underground garages, for which there was a need. Those engaged in essential services would require gas masks and also oilskin clothing to protect them against airplane spraying and contamination by liquid splashes. Whether the rest of the civilian population would need gas masks was a difficult problem. It would not be possible to supply the millions that would be wanted in an emergency, and so it might be desirable to provide some simple type that would be on sale in peacetime and could be readily made by the million in time of war.

## PARIS

*(From Our Regular Correspondent)*

Oct. 15, 1934.

### Dilaudidomania, a New Drug Habit

At a recent meeting of the Hospital Medical Society, attention was directed to the habit forming danger of a much exploited opium derivative, dilaudid. The advantages of this new drug over diacetylmorphine and morphine as a sedative for cough or pain were claimed to be that the dose was only one third that of the other preparations and that there was no danger of the formation of a habit.

Dr. Sainton opposes both of these supposed advantages. He has found that dilaudid gives the same feeling of euphoria and that there is the same craving for larger and larger doses until a habit is formed, as in the case of morphine and diacetylmorphine. One should be as careful in prescribing this new drug as if one were dealing with the older preparations.

### Tetanus Without Demonstrable Atrium of Infection

At the July 3 meeting of the Paris Pediatric Society, Drs. Weill-Halle and Klotz reported a case of tetanus with typical but rather mild symptoms in a 4 year old child. Careful search failed to find an atrium of infection in the skin, the visible mucous membranes or the alimentary tract. Recovery followed the administration of antitetanic serum.

In the discussion of this paper, Dr. Apert reported a similar case in an older child in which, however, the atrium was in the intestine. Dr. Schreiber added another in a 9 months old infant without a demonstrable atrium of infection, also cured by serotherapy.

The use of relatively large doses of chloral as an adjuvant to serotherapy was recommended in the treatment of infantile tetanus.

### The Father of Modern Advertising

No modern writer has been able to excel Balzac in the portrayal of all types of individuals, such as one finds in his various novels. Although written nearly a century ago, his books seem as full of interest as if they were written today. A French journalist has recently resurrected one of Balzac's characters, a Dr. Veron, who failed as a practitioner and tried journalism. During a luncheon with some fellow newspapermen, Veron predicted that the day would come when publicity for a toilet water or drug would attract as much attention as the review of a new book in their day. The doctor found a formula for a cough drop and exploited his product in the journals to such an extent that he soon waxed rich and was able to abandon both his medical and his journalistic career. The writer who has resurrected Dr. Veron believes that Balzac, through this character, can be regarded as the father of modern publicity.

### Has Eugenic Sterilization Any Value?

Every medical student in France and its colonies must present a thesis in order to fulfil the requirements for graduations. Szwarcz (Thèse de Paris, 1934) chose as the subject of his thesis "The Eugenic Sterilization of Abnormals." Some of the author's statements are of interest and will be quoted here:

The arguments thus far presented to defend both the necessity and the efficacy of eugenic sterilization are not based on proved scientific data.

One is unable to prognosticate, except in rare instances, that diseases will be inherited. Aside from certain unusual diseases or familial malformations, the mendelian laws of heredity encounter serious objections.

The data of probable inheritance are too general and subject to too many variations to have any but theoretical value.

The application of average statistics to hereditary prognosis and to eugenic sterilization in special cases is too uncertain. It frequently leads to serious errors because there is always a possibility that the future generation will be healthy.

It is too soon for geneticians to assume the rôle of experts in the form of being able to predict accurately the heredity of human diseases. The conscientious physician cannot therefore accept the principle of eugenic sterilization with all its practical consequences.

Hereditary stigmas frequently disappear completely or at least appear in greatly attenuated form in children born of diseased parents.

Eugenic sterilization has thus far not greatly decreased the total number in succeeding or even in the present generation. Modern methods of treatment have greatly influenced the possibility of transmission of hereditary taints. Observations covering a period of centuries show that the majority of mental and nervous hereditary stigmas are the result of alcoholism, tuberculosis and syphilis; in other words, the result of faulty environment, which should be conquered by other curative agents than sterilization.

## BERLIN

*(From Our Regular Correspondent)*

Sept. 17, 1934.

### Health Insurance in 1933

The Federal Bureau of Statistics has just published a preliminary report on health insurance in 1933. The report gives the number of krankenkassen, the number of members, the amount of dues paid and the total performance of the society. Since 1914, the number of krankenkassen has steadily declined. In 1914 there were 9,944 krankenkassen; in 1928, 7,426; in 1930, 7,183; in 1932, 6,611; in 1933, 6,427, and, at the end of 1933, 6,327 krankenkassen.

The average number of members in 1931 was 20,616,000; in 1932, 18,712,000, and in 1933, 18,525,000. While this was the yearly average, the total membership at the end of 1933 was about 1,600,000 greater than at the beginning of the year. The number of obligatory members was reduced by 127,000, and the number of voluntary members by 60,000. There are, however, still 3,400,000 voluntary members, 2,300,000 of whom are members of local krankenkassen. The administration of the krankenkassen requires the services of 34,300 persons. There are about two administration officials to each thousand members. The number of panel physicians is about 32,000. The monthly or quarterly dues have been considerably reduced. By the end of 1929, nearly 2,000 krankenkassen with nearly 12,000,000 members exacted dues in excess of 6 per cent of the wages of members; by the end of 1933 there were only 246 krankenkassen with 1,740,000 members still requiring 6 per cent of wages earned. For the granting of performances that exceeded those provided for in the by-laws, certain additional dues were demanded. Only those krankenkassen whose dues did not exceed 5 per cent of the wages earned could grant additional performances. This provision prevented 1,458 krankenkassen with 8,200,000 members from granting such additional performances. Other krankenkassen made use of this feature and paid an increased weekly sick benefit to those members who had to provide for others besides themselves. Further additional performances were granted in the form of special grants for medicine and minor remedies prescribed for members of the family. Some krankenkassen assumed (partially or entirely) the costs of minor remedies, cordials and major remedies. Still others paid part of the hospital charges. In the matter of aid for puerperants, the legally prescribed amounts were exceeded by few krankenkassen. On the other hand, a number of krankenkassen granted an additional amount for a burial, the usual allowance being twenty times the fundamental wages. Nearly 40 per cent of all the krankenkassen paid twenty-five times the wage scale, or an increase of 25 per cent. About the same

portion of the krankenkassen paid the burial allowance in the event of the death not only of the head of the family but also of other members of the family.

### Further Details on the Sterilization Problem

Since the last report (THE JOURNAL, September 15, p. 849), a number of new facts have developed. The previous report contained accounts of the activities of the recently established eugenics courts. In the meantime, figures on the workings of the sterilization law in Baden have been published. Up to June 15, 1934, 3,025 petitions for sterilization had been filed, which represented about 1.2 per thousand of the population. Sterilization was legally ordered in 997 cases and refused in thirty-two cases. Up to the date mentioned, the intervention had been applied to 289 men and 283 women.

Some time ago, the execution of the law was lagging far behind, as the federal minister of the interior emphasized in an official statement. Especially urgent are the procedures against such persons as present the gravest danger of producing offspring with serious hereditary defects. A speeding up of the work of the eugenics courts is necessary for the reason that it is desirable to put an end to the overcrowding of the institutions for mental patients. A great part of the institutions, owing to the executive order that inmates who have hereditary diseases may not be dismissed until a petition pertaining to their individual case has been presented and a decision has been reached, are filled to capacity. The result is that there is danger that new patients seeking entrance cannot be admitted. Therefore, if need arises, several separate chambers in the individual eugenics courts should be organized.

In accordance with a suggestion of the Prussian minister of justice, in the detection of persons amenable to the law, special attention should be given first to the weakminded and schizoid psychopaths, and, secondly, to the criminally inclined juveniles who have been gathered in the penitentiaries, where there are doubtless large numbers of persons who should be sterilized. The decision will be made when such juveniles have reached the age of 20, at which time the list of penalties imposed is already fairly large.

In Saxony, a detection center for weakmindedness, insanity and epilepsy has been established. This detection center is designed for patients with respect to whom a well balanced decision as to whether they belong to the designated groups of hereditary patients could not be secured by putting them in an institution, or in any other way, and for whom therefore a precise psychiatric observation is needed to clarify their condition.

The federal bureau of health instituted a preliminary inquiry in twenty-one institutions for mental patients and epileptic and weakminded persons, concerning which Dr. Dornedden gave a report. It was found that for these 24,000 inmates, at the end of 1933, the duration of treatment, in the same institution, per hundred inmates, was as shown in table 1.

TABLE 1.—*Duration of Hospital Stay of Various Groups*

| | Percentages | | | | | | |
|---|---|---|---|---|---|---|---|
| Age Groups | Under 1 Year | 1-3 Years | 3-5 Years | 5-10 Years | 10-15 Years | 15-20 Years | Above 20 Yrs. |
| Under age 20 | 19.7 | 24.7 | 22.5 | 26.1 | 6.4 | 0.5 | ... |
| 20-39 age group | 16.6 | 20.9 | 15.6 | 28.7 | 11.6 | 3.4 | 3.1 |
| 40-59 age group | 13.2 | 16.0 | 13.1 | 25.9 | 16.2 | 6.0 | 9.6 |
| Age group above 60 | 14.1 | 15.4 | 10.7 | 20.7 | 14.1 | 6.0 | 19.1 |
| All groups | 16.1 | 18.8 | 14.7 | 25.5 | 12.8 | 4.4 | 7.7 |

It appears from this table that on Dec. 31, 1933, about half of the inmates had been resident up to five years, 25 per cent from five to ten years, and 25 per cent more than ten years, in the same institution. Former stays in other institutions are not considered, so that these figures are low. About three fourths of the inmates of institutions were from 20 to 59 years old, whereas, of the total population of the German reich, only 57.5 per cent belonged to these age groups. Likewise, the proportion of persons more than 60 years old is higher than the proportion of that age in the total population.

TABLE 2.—*Sterilization in Its Bearing on the 24,215 Inmates of Institutions*

| | | Percentage of Patients Presumably | | |
|---|---|---|---|---|
| | | | Dismissible Later | |
| Type of Disease | Percentage of Inmates Affected | Requiring Permanent Hospital Care | After Sterilization | Without Sterilization |
| Congenital weakmindedness | 23.2 | 70.8 | 26.8 | 2.4 |
| Schizophrenia | 43.5 | 69.0 | 24.6 | 6.4 |
| Manic-depressive insanity | 2.5 | 39.8 | 28.0 | 32.2 |
| Hereditary epilepsy | 10.7 | 65.3 | 28.7 | 6.0 |
| Hereditary chronic chorea | 0.2 | 83.0 | 9.4 | 7.5 |
| Other diseases | 19.9 | 62.2 | 7.6 | 30.3 |
| | 100.0 | 67.0 | 22.5 | 10.5 |

It is evident, therefore, that about two thirds of the inmates of institutions are in need of constant care, while 22.5 per cent may possibly be subjected to sterilization and be allowed their liberty. That amounts, for a total of 160,000 inmates in all such institutions, to about 36,000 sterilizations, which does not take account of the patients admitted each year, of whom presumably less than two thirds need permanent care and hence more than 22.5 per cent may be regarded as possibly amenable to sterilization.

## ITALY

*(From Our Regular Correspondent)*

Aug. 31, 1934.

### Meeting of Gastro-Enterologic Society

Members of the Società di gastro-enterologia met recently, for the first time, in Milan, at the Clinica Medica, under the chairmanship of Professor Zoia.

Allodi of Turin presented a paper on achylia gastrica. Theoretically the term "achylia gastrica" should be applied only to those cases in which various tests furnish evidence of a complete and persistent absence of the secretory function. Practically, however, it is logical to include those cases which, aside from a complete absence of acid, present a marked deficiency, with reference to certain other tests. The condition is more prevalent in women than in men. The pathogenesis, according to modern views, is connected with previous inflammatory gastric lesions. As to etiology, importance attaches to endogenous factors (micro-organisms and toxins) originating in the region of the portal vein and the liver. One may distinguish a true achylia from false achylias.

Fasiani and Chiatellino of Padua spoke on the anemias that sometimes follow gastric resection. Total gastrectomy appears to lead frequently to an anemia of the pernicious type. Gastric resection in general leads in a small number of cases to states of simple hypochromic anemia. The practical importance of these hypochromic anemias in connection with partial gastric resections is, from the surgical point of view, not great, because they are rare and easily controlled by treatment. If one chooses the method of resection, the first method of Billroth appears preferable, since, aside from other values, it has the advantage of rendering the disposition to anemia less frequent.

Vespignani and Lenarduzzi of Padua presented a paper on radiologic research in achylia gastrica. Radiology serves to exclude those conditions which may be confused with achylia, the recognition of some of which is aided by the radiologic examination. Radiology may also aid in the diagnosis of

achylia by pointing out the existence of cancer of the stomach or linitis plastica, which may be confused with achylia.

Many conventionists participated in the discussion. Professor Donati of Turin stated that, since achylia gastrica is not an independent entity, it did not seem correct to attempt to describe its symptomatology. In sixty persons operated on for gastric and duodenal ulcer, he had never observed signs of pernicious anemia or grave secondary anemias. Sisto holds that the gastric lesion is to be regarded as due to an impairment of the antianemic substance or influence existing in the stomach. Schiassi called attention to a peculiar syndrome that he had observed and that may be considered under three heads: anemia, hepatosplenomegaly and a type of underdevelopment that may be very marked. He said he was unable to point out the causal factors of this type, but from the point of view of practical medicine the diagnosis is now certain and the therapy is nearly always successful.

### Factors That Act on the Pressure of the Cerebrospinal Fluid

Debeus reported to the Società medica of Gorizia the results of his study on the pressure of the cerebrospinal fluid. In cases of intracranial hypertension, as in cerebral tumors and in fractures of the cranium, intravenous injections of methenamine or from 30 to 50 per cent solutions of dextrose are to be recommended. Rachiocentesis gives only temporary aid.

In schizophrenic patients (145 cases observed) the cerebrospinal fluid frequently presented a slight increase of pressure, in addition to a small increase of the proteins and globulins.

Sussi recalled that hypertonic substances find a wide application in the treatment of persons with cranial traumas, in which there is ordinarily a state of hypertension. In the surgical department of which he is director more than 300 cases have been treated in this manner, without lumbar puncture ever being applied. The substances used were a 20 per cent solution of magnesium sulphate, a 40 per cent solution of dextrose, a 40 per cent solution of methenamine, and caffeine.

### Antituberculosis Convention

In the Clinica Medica of Genoa the first Ligurian antituberculosis convention was recently held. The three schools that establish the trend in Italy of the modern crusade against tuberculosis are the immunizing school, represented by Professor Maragliano; the constitutional school of preventive medicine, of which Professor Pende is the head, and the school of the curative method of tuberculosis based on artificial pneumothorax.

Professor Pende, director of the Clinica Medica of Genoa, in his address described the purposes of the convention, which was based on the two most important problems of modern social phthisiology: the most suitable method of treating the first tuberculous lesions in young persons and the organization of sanatorial climatic treatment. During a period of six years in which Professor Pende examined 9,752 Ligurian children and workmen in the factories, he found that 2 per cent of the young persons apparently healthy present progressive tuberculous diseases of the lungs. In regard to sanatoriums, Professor Pende emphasized the need of erecting such institutions in the plains and in high plateau regions having an altitude of from 1,100 to 1,300 meters, for the application of mountain treatment, which he considers highly indicated.

Professor Morelli stated that an important feature of the crusade against tuberculosis is the study of the constitution of the victims, which will make it possible to treat rationally all those who are found predisposed to the disease. From more than 50,000 a year, the number of deaths from tuberculosis in Italy has declined to 35,000, as a result of the progress in prophylaxis in the schools and the offices, and of climatic therapy.

## VIENNA

*(From Our Regular Correspondent)*

Sept. 24, 1934.

### Organization of Blood Donors in Vienna

An important recent creation of the public health service concerns the organization and documentation of blood donors, who must be ready to furnish at any moment from 300 to 500 cc. of blood. At present there are about 300 professional blood donors in Vienna (mostly unemployed persons), who are kept under constant supervision. For the past eighteen months the following system has been followed: In the General Hospital a room has been equipped for the accommodation of twelve men, who constitute the "blood donors for the day." From six to ten donors are needed every day, and the addresses of twelve other donors who can be secured within a short time make provision for emergencies. Every donor carries on his person his "certificate," in which, along with his photograph, there is a record of his blood group and the results of his blood examinations, which must be repeated monthly, and in which every transfusion is recorded, which prevents any immoderate use of a donor. Women are not much in favor as professional blood donors, although it is planned to use more women than formerly. The use of women presents certain difficulties and will require some changes in the organization of the system. The usual fee for a transfusion of 500 cc. of blood is 80 shillings (about $16), although higher fees may be charged if the donor is called to a private sanatorium. An attempt is made to take each blood donor in his turn, as far as possible, in order that all of them may be equally employed. Of the six women at present on the list (aged from 20 to 25 years) two are always available, and it is planned to admit others to the list, in order that the difficulties associated with menstruation may be overcome. The record for the number and amount of his transfusions is held by a young athlete who, within a period of eight years, has served thirty-six times as blood donor. He is only 25 years old, but he has already supplied about 18 liters of blood. On a certain occasion he served twice as a donor within three days, but that is no longer permitted. The donors state that the loss of half a liter of blood weakens them scarcely perceptibly—after two or three days they are completely restored. As for the indications for transfusion, that intervention is resorted to now in extensive burns, in poisonings, in operations with great loss of blood, in diabetes, in various forms of primary and secondary anemia, and—of late—in cancer patients.

### Statistics of Vienna Physicians

Statistics collected by the board of health of Vienna show that 3,935 physicians were registered in 1933 as entitled to practice medicine. Of that number 1,110 were specialists, 650 were dentists and 730 were hospital physicians; 962 were permanently engaged as physicians to the krankenkassen; in addition, 2,760 physicians were part-time assistants to the krankenkassen but had no fixed appointment. All physicians treated members of the krankenkassen occasionally and were paid for their services in the individual case. It appears that, aside from the hospital physicians, who are not permitted to engage in general practice, nearly all the physicians of Vienna derive their subsistence, at least in part, from the krankenkassen. The total number of physicians is not much greater than last year. The number of specialists shows considerable increase: 1,110 as against 920 in 1932. The number of hospital physicians shows a decrease, having dropped from 800 to 720, as stated. Many hospital physicians have been dismissed without new appointments having been made. A classification of physicians according to their religious faith has been attempted. It is held that the number of Jews and of non-Jews is about equal, although the number of Jews in Vienna is something over 10 per cent. In addition to these practicing physicians,

there are in Vienna about 240 medical officials, who are not allowed to practice but serve as government or municipal physicians or as health officers,

### Sale of a Medical Practice as an Ethical Problem

The economic crises have brought up the question as to whether a physician or his heirs are justified in endeavoring to realize on the capital represented by a medical practice. Many discussions on the subject have been held of late at sessions of the Wirtschaftliche Organisation der Aerzte of Vienna, and two opposite opinions have been defended. Whereas the lawyers expressed the view that developments of modern economic life have tended to cause the medical profession to be regarded as a commercial enterprise, which can be bought or sold the same as any other business undertaking, the members who cling to medical traditions held the view that a medical practice "rests primarily on ethical principles" and not on the acquisition of money as does a business. They are absolutely opposed to the idea that a medical practice, which nearly always is based only on purely personal qualities, shall be made the object of a commercial transaction. The confidential relation between the physician and his patient is not a marketable product and cannot be transferred to another person at will. Up to the present, too, the laws of Germany, Austria and Czechoslovakia have been opposed to all commercial transactions involving a medical practice. But, when a dental practice or medical institution, such as a sanatorium or hydro-electrotherapeutic institutions, are the interest involved, the law views the matter in the same light as any other enterprise constituting a source of revenue. It may be said, therefore, that the majority of the leaders of the medical profession are opposed to the transfer of a medical practice for a monetary consideration. It is generally recognized, however, that this is the standpoint of the older generation. The younger physicians take a more practical view of the matter, and, while they also are convinced of the need of upholding strictly the ethics of the profession, they do not regard the sale of a medical practice, by any means, as a misdemeanor or impropriety but rather as a dire necessity conditioned by the inexorable developments of modern life.

### Cancer of the Gastro-Intestinal Tract

At a session of the physicians of the Kärntener Spital, Dr. Förster discussed recently the modern views on ulcers of the digestive tract. As yet none of the theories advanced in explanation of the causes of ulceration have found general acceptance. There is general agreement that ulcers are not due to a purely local process but are the result of a disturbance of the vegetative nervous system. There has been a marked increase of ulcer disease in recent decades. Statistics of various hospitals in Austria show that in 1898 only 0.07 per cent of the clients were "ulcer" patients (departments of surgery and internal medicine). By 1930 the percentage had risen to 5.7. This increase is due in part to the fact that formerly an ulcer often escaped diagnosis. With the coming of roentgen rays and the progress of modern surgery, physicians have learned how frequently ulcerations occur. But, aside from this fact, it is evident that there has been a steady increase of ulcer disease in civilized countries. Ulcers are therefore becoming a heavy burden on the department of public welfare. Ulcer disease should therefore receive the same attention as cancer, rheumatism and tuberculosis. In spite of progress in diagnosis and treatment, it is a cardinal demand that the fundamental cause of ulcer be discovered.

### Prof. Dr. Max Sternberg

The death of Prof. Dr. Max Sternberg, an eminent internist, after a long illness, at the age of 71, has been announced. As a student his keen powers of observation and his knowledge of physiology attracted attention, so that he soon became an assistant at the Physiologic Institute and at the Institute of Internal Medicine. In 1894 he was appointed instructor and in 1903 a professor. He published many articles on the heart, nervous disorders and industrial diseases, and was one of the first to give a course in social medicine in Vienna. He published the results of his researches on the "tendon reflexes," "acromegaly," "systemic disorders of the bones" and "diseases of carpenters and shoemakers"; also on "occupational diseases of the lungs," and he made valuable contributions also to anatomy and physiology. His diagnoses were famous for their accuracy. On the occasion of a reception in his honor, Professor Kundrat, the pathologic anatomist of Wieden Hospital (where Sternberg was the head of the department of internal medicine for thirty years) stated that he had always confirmed at necropsy the 100 per cent accuracy of Sternberg's clinical diagnoses. As chief physician of the large krankenkasse of the Vienna Genossenschaft der Gewerbetreibenden, he was brought in contact with a large number of cases, from which he constantly enriched his medical knowledge. His passing leaves a wide gap in the medical profession of Vienna.

### Prof. Dr. Reuss Summoned to Vienna

The pediatrician Prof. Dr. August von Reuss, a pupil of Escherich and Pirquet and who a few years ago was called from Vienna to the University of Graz, has been asked to take over the vacancy caused by the death of Dr. Moll and to serve as director of the Institute for Infants and Mothers in Vienna. This institute exerts a great influence on pediatrics in Austria. Modern welfare work took its inception from this institute, and Professor Reuss is an authority in this field. He plans to organize, within the department of social welfare, a center for welfare work among children, so that the general care of the younger generation and their welfare will be united in his hands.

## *Marriages*

DANIEL MARVIN ADAMS JR., Panama City, Fla., to Miss Mary Thompson of Fort Lauderdale at Miami, September 24.

HAROLD CARL BOYLEN, Wheeling, W. Va., to Miss Audrey Carolyn Lucas of Louisville, Ky., at Wheeling, October 4.

PATRICIA HART DRANT, Philadelphia, to Mr. William Warren Rhodes of Wilmington, Del., August 18.

ROY DE VAUGHAN METZ, Detroit, to Miss Gussie Dean Gaston of Woodruff, S. C., September 24.

LEONARD DEWITT MURPHY, Buena Vista, Tenn., to Mrs. F. H. Brown of Nashville, September 29.

WILLIAM H. KERR to Miss Eula May Rossean, both of Hamburg, Iowa, at Sidney, September 5.

ALVIN F. COBURN, New York, to Miss Agnes Campbell Cooke of Paterson, N. J., October 2.

STEPHEN T. MANONG to Miss Marion Elizabeth O'Leary, both of New York, September 29.

JAMES DEVOTE PERDUE, Mobile, Ala., to Miss Ayrault Chapman of Jackson, July 25.

LOUIS I. GOLDBERG, Philadelphia, to Miss Julia Bredt of Mahanoy City, Pa., July 26.

JOHN R. RANKIN to Miss Vera Evalyn Langley, both of Keokuk, Iowa, September 8.

EDWARD H. FILES to Miss Grace Glass, both of Cedar Rapids, Iowa, September 8.

JOHANNES M. L. JENSEN to Miss Anita Netzow, both of Milwaukee, September 15.

LUCY CAROL MILLER to Herbert Frank, D.D.S., both of New York, September 22.

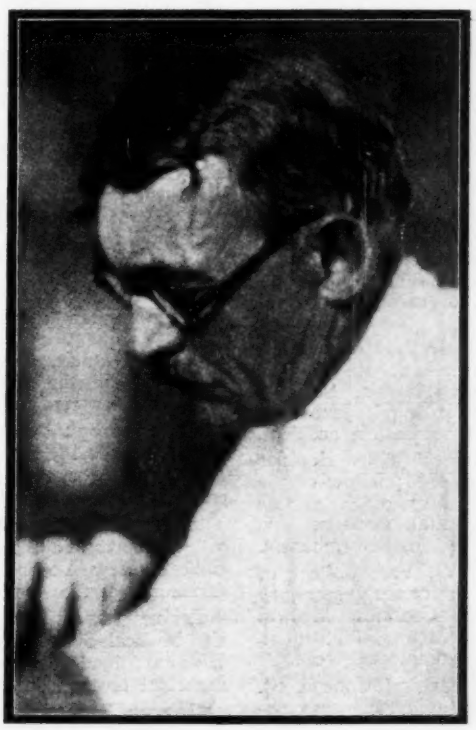
GEORGE D. CALLAHAN to Miss Helen Anderson, both of Iowa City, August 22.

JOHN M. KARCH, Cincinnati, to Miss Rosemarie Brinck of Celina, Ohio, recently.

J. MALLORY CARLISLE to Miss Lillian Burt, both of Philadelphia, August 16.

# Deaths

**Bailey Kelly Ashford** ✠ Colonel, U. S. Army, retired, and professor of tropical medicine and mycology, University of Puerto Rico School of Tropical Medicine (Columbia University), died, November 1, at his home in San Juan, P. R. Colonel Ashford was born, Sept. 18, 1873, in Washington, D. C. He studied at the Columbian University, now known as George Washington University, and Georgetown University, where he received his medical degree in 1896 and the degree of doctor of science in 1911. In 1897 he entered the U. S. Army Medical Corps, in which he rose to the rank of colonel. In 1898 he went to Puerto Rico as a member of the military expedition, remaining during the United States occupation of the island, in command of medical department troops. In 1899 he recognized ancylostomiasis as the cause of the anemia prevalent among the rural population of Puerto Rico and in 1904 he founded the Puerto Rico anemia commission to carry on a campaign to combat that disease. Colonel Ashford also conducted extensive research on the etiology and treatment of sprue. The Institute of Tropical Medicine, which Colonel Ashford assisted in creating in 1911, led to the establishment in 1924 of the School of Tropical Medicine of the University of Puerto Rico in affiliation with Columbia University, in which school he continued as professor of tropical medicine. In 1933 both universities conferred honorary degrees on Colonel Ashford and the government of Puerto Rico placed the Ashford bust in the school as a memorial. During the World War he accompanied the first division to France as medical officer and later trained medical personnel at the front. Congress conferred on him the Distinguished Service Medal, while England conferred the Cross of St. George and St. Michael for services with the British. He was a fellow of the American College of Physicians and the American College of Surgeons, a member of the American Society for Clinical Investigation, the Association of American Physicians and Association of Military Surgeons of the United States, past president of the American Society of Tropical Medicine, and honorary member and past president of the Medical Association of Puerto Rico. In 1910 Colonel Ashford was a delegate from the United States to the International Congress of Industrial and Alimentary Hygiene in Brussels. In 1916 the Rockefeller Foundation appointed him a member of the medical commission to Brazil and in 1928 delegate to the International Congress of Tropical Medicine and Hygiene at Cairo, Egypt. He was the author of "Anemia in Puerto Rico," "Uncinariasis in Puerto Rico," "The Organization and Administration of the Medical Department in the Zone of the Armies" (Keen's Surgery, volume VII) and "Sprue" (Tice's Loose-Leaf Medicine, 1931) and editor of "Medical History of the World War."



BAILEY KELLY ASHFORD, M.D.,
1873-1934

**William Scott Renner** ✠ Buffalo; McGill University Faculty of Medicine, Montreal, Que., Canada, 1884; formerly professor of laryngology, Niagara University Medical Department, Buffalo, clinical professor of laryngology and associate professor of otolaryngology, University of Buffalo School of Medicine; member of the American Academy of Ophthalmology and Oto-Laryngology, American Laryngological Association, American Laryngological, Rhinological and Otological Society and American Otological Society; fellow of the American College of Surgeons; past president of the Buffalo Academy of Medicine; at various times on the staffs of the Buffalo Eye and Ear Infirmary, Buffalo Children's Hospital, Sisters of Charity Hospital, Deaconess Hospital, Emergency Hospital, Mercy Hospital, Memorial Hospital, Buffalo City Hospital and the Erie County Hospital, Buffalo, and the J. N. Adam Hospital, Perrysburg, N. Y.; consulting specialist in diseases of the ear, nose and throat, U. S. Public Health Service and the U. S. Veterans' Bureau; aged 73; died, October 10, of bronchopneumonia.

**John Rich McDill,** Cornwall-on-the-Hudson, N. Y.; Rush Medical College, Chicago, 1885; a founder of the American College of Surgeons; a founder and past president of the Manila (P. I.) Medical Society; past president of the Philippine Islands Medical Association; formerly professor and head of the department of surgery, University of the Philippines College of Medicine, and associate professor of surgery at his alma mater; veteran of the Spanish-American and World wars; chief medical officer of the Federal Board for Rehabilitation of Disabled Soldiers, with rank of assistant surgeon general, U. S. Public Health Service, 1919-1921; chief medical consultant to the U. S. Veterans' Bureau, 1922-1923, and for many years medical officer in charge of the U. S. Veterans' Hospital, Waukesha, Wis.; organized and became chief surgeon to the Woman's Hospital, Manila, in 1902 and St. Paul's Hospital, Manila, 1905-1910; chief surgeon to the Philippine General Hospital, 1910-1912; author of "Tropical Surgery"; aged 74; died, September 14, in the Cornwall (N. Y.) Hospital.

**James Cornelius Wilson** ✠ Philadelphia; Jefferson Medical College of Philadelphia, 1869; emeritus professor of the practice of medicine and clinical medicine at his alma mater; past president of the Philadelphia County Medical Society, the American Academy of Medicine, the Association of American physicians, the American Climatological Association, the American Therapeutic Society and the College of Physicians; at various times on the staffs of the Pennsylvania Hospital, Jefferson Medical College Hospital, Lankenau Hospital, Philadelphia Lying-In-Charity Hospital, Rush Hospital for Consumptives, Jewish Hospital and the Bryn Mawr (Pa.) Hospital; author of "The Summer and Its Diseases," "A Treatise on the Continued Fevers," "Fever-Nursing," and "A Hand Book of Medical Diagnosis"; editor of "American Text-Book of Applied Therapeutics"; aged 87; died, October 28, of chronic myocarditis.

**John Edward Clark,** Detroit; University of Michigan Medical School, Ann Arbor, 1877; member of the Michigan State Medical Society; emeritus professor of chemistry and formerly dean of the department of pharmacy and professor of chemistry and toxicology, Detroit College of Medicine; professor of general chemistry and physics, Michigan College of Medicine, 1879-1885; at one time member and president of the board of education; for many years chemist for Wayne County; author of "Clark's Physical Diagnosis and Analysis," and "Laboratory Technique for Medical Students"; aged 84; died, September 19.

**John Williams Coon,** Stevens Point, Wis.; Jefferson Medical College of Philadelphia, 1884; past president of the Mississippi Valley Conference on Tuberculosis and the Milwaukee County Medical Society; professor of hygiene at the Milwaukee College of Physicians and Surgeons, 1897-1904; superintendent of the Milwaukee County Hospital, 1906-1908, Wisconsin State Sanatorium, 1909-1914, and the Municipal Tuberculosis Sanitarium, Chicago, 1914-1915; medical director of the River Pines Sanatorium; aged 74; died, September 17, of bronchopneumonia, arteriosclerosis and thrombosis.

**Edwin J. Norris,** St. Louis; St. Joseph (Mo.) Medical College, 1888; Marion-Sims College of Medicine, St. Louis, 1891; formerly instructor in ophthalmology, associate professor of ophthalmology and professor of ophthalmology, St. Louis College of Physicians and Surgeons, and instructor in clinical ophthalmology, National University of Arts and Sciences Medical Department, St. Louis; aged 67; died, September 26, in the Deaconess Hospital, of pneumonia.

**Philip Henry Stewart,** Paducah, Ky.; University of Louisville School of Medicine, 1890; president of McCracken County Medical Society; member and past president of the Kentucky State Medical Association; past president of the Walnut Log Medical Society; fellow of the American College of Surgeons; served during the World War; aged 66; on the staffs of the Illinois Central Hospital and the Riverside Hospital, where he died, October 8, of brain tumor.

**Earle Stanley Green** ⊕ Muncie, Ind.; Indiana Medical College, School of Medicine of Purdue University, Indianapolis, 1907; past president of the Delaware-Blackford Counties Medical Society; served during the World War; at one time secretary of the city board of health; for many years on the staff of the Home Hospital, now known as the Ball Memorial Hospital; aged 51; died suddenly, October 11, of coronary occlusion.

**William Walling Van Dolsen** ⊕ Philadelphia; Atlantic Medical College, Baltimore, 1909; Medico-Chirurgical College of Philadelphia, 1914; served during the World War; on the staffs of the Graduate, Germantown, Jewish, Mount Sinai and St. Agnes hospitals and the West Philadelphia Hospital for Women; aged 47; died, October 3, of heart disease.

**Seldom Burden Overlock** ⊕ Pomfret, Conn.; Bellevue Hospital Medical College, New York, 1889; member of the New England Surgical Society; fellow of the American College of Surgeons; at one time councilor of Windham County; surgeon in chief to the Day Kimball Hospital, Putnam; aged 74; died, October 8, of heart disease.

**David Irvine Christopher,** Colorado Springs, Colo.; Bellevue Hospital Medical College, New York, 1874; member of the Colorado State Medical Society; aged 88; on the staffs of the Union Printers' Home and Tuberculosis Sanatorium and St. Francis Hospital, where he died, September 30, of carcinoma of the tongue.

**Friend Bennett Gilpin,** Cranford, N. J.; University of Pennsylvania School of Medicine, Philadelphia, 1901; member of the Medical Society of New Jersey; veteran of the Spanish-American and World wars; aged 57; on the staff of the Elizabeth (N. J.) General Hospital, where he died, October 2, of heart disease.

**Charles Daniel Easton** ⊕ New York; Harvard University Medical School, Boston, 1904; member of the Rhode Island Medical Society; served during the World War; formerly on the staff of the Newport (R. I.) Hospital; aged 58; died, October 4, in the New York Hospital, of carcinoma of the rectum.

**John C. Furlong,** Spring Grove, Ill.; Rush Medical College, Chicago, 1891; member of the Illinois State Medical Society; past president of McHenry County Medical Society; aged 71; died, October 8, in the Mercy Hospital, Janesville, Wis., of injuries and shock following an automobile accident.

**W. Bean Moulton** ⊕ Portland, Maine; Johns Hopkins University School of Medicine, Baltimore, 1903; fellow of the American College of Surgeons; on the staffs of the Maine General Hospital and the Children's Hospital, Portland, and the Webber Hospital, Biddeford; aged 57; died, September 14.

**Harry Franklin Coffman** ⊕ Keyser, W. Va.; College of Physicians and Surgeons, Baltimore, 1913; formerly secretary of the Grant-Hampshire-Hardy-Mineral Counties Medical Society; aged 51; died, October 9, in the Memorial Hospital, Cumberland, Md., of septicemia following an infected tooth.

**Calvin Rhea,** Thayer, Mo.; Missouri Medical College, St. Louis, 1882; member of the Missouri State Medical Association; past president of the Oregon County Medical Society; aged 72; died, September 29, in the Baptist Hospital, Springfield, of coronary thrombosis.

**George Perry Campbell,** Nacogdoches, Texas; University of Texas School of Medicine, Galveston, 1911; member of the State Medical Association of Texas; aged 46; on the staff of the City Memorial Hospital, where he died, September 27, of typhus fever and pneumonia.

**Charles Radcliffe Johnson** ⊕ Batavia, N. Y.; Columbian University Medical Department, Washington, D. C., 1897; on the staff of the Veterans' Administration Facility; aged 62; died, September 24, of arteriosclerosis, cerebral hemorrhage and bronchopneumonia.

**Charles Howard McDevitt** ⊕ Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1900; lecturer on orthopedics, Temple University School of Medicine; aged 58; clinical assistant at the Temple University Hospital, where he died, September 11.

**James Warren Hamilton,** Mount Vernon, Ill.; Barnes Medical College, St. Louis, 1895; member of the House of Delegates of the American Medical Association, 1914-1915; member of the Illinois State Medical Association; aged 63; died, August 24.

**George Hayward Nichols,** Providence, R. I.; University of the City of New York Medical Department, 1886; aged 76; died, July 31, in the Jane Brown Memorial Hospital, of carcinoma of the large bowel, cardiorenal disease and intestinal obstruction.

**Arthur Gilbert Harrison,** Searcy, Ark.; Memphis (Tenn.) Hospital Medical College, 1901; member of the Arkansas Medical Society; past president of the White County Medical Society; aged 59; died, October 5, in the Baptist Hospital, Memphis.

**Harvey Samuel Cook,** Valparaiso, Ind.; Chicago College of Medicine and Surgery, 1913; member of the Indiana State Medical Association; city health officer; member of the city council; served during the World War; aged 46; died, September 1.

**Gilman Osgood** ⊕ Rockland, Mass.; Bellevue Hospital Medical College, New York, 1886; member of the House of Delegates of the American Medical Association, 1915-1916, 1918 and 1920; aged 71; died, September 8, of miliary tuberculosis.

**William A. Ellison,** Augusta, Ga.; Maryland Medical College, Baltimore, 1904; member of the American Psychiatric Association; clinical director of the Veterans' Administration Facility; aged 51; died, September 22, of carcinoma of the kidney.

**Herman Earhart Almes** ⊕ Chicago; Cleveland College of Physicians and Surgeons, Medical Department of the University of Wooster, 1889; Western Pennsylvania Medical College, Pittsburgh, 1890; aged 66; died, October 13, of carcinoma.

**Robert Hardy Trammell,** Excelsior Springs, Mo.; Medical College of Alabama, Mobile, 1887; served during the World War; aged 71; died, October 2, in the Veterans' Administration Facility, of cardiorenal disease and arteriosclerosis.

**William Walton Lowe,** Gillett, Ark.; St. Louis University School of Medicine, 1903; member of the Arkansas Medical Society; for many years president of the school board; aged 58; died, September 23, of heart disease.

**Flora Adams** ⊕ Hackensack, N. J.; Cornell University Medical College, New York, 1920; aged 42; on the staff of the Hackensack Hospital, where she died, October 20, of injuries received in an automobile accident.

**Boris Margulis,** Newark, N. J.; Universität Bern Medizinische Facultät, Bern, Switzerland, 1916; aged 47; died, August 7, in the Beth Israel Hospital, of myocarditis and cardiovascular renal disease.

**Leon Joseph Witkowski** ⊕ Chicago; Northwestern University Medical School, Chicago, 1907; on the staff of the Englewood Hospital; aged 51; died, October 14, of cerebral emboli and renal calculus.

**Thomas Herbert Allen** ⊕ Lake Mahopac, N. Y.; College of Physicians and Surgeons, Medical Department of Columbia College, New York, 1875; aged 80; died, September 22, of carcinoma of the liver.

**Irving Jewell Fisher** ⊕ Newton, Mass.; Harvard University Medical School, Boston, 1900; on the staff of the Newton Hospital; aged 56; died, August 30, in Liverpool, England, of intestinal obstruction.

**George F. Darracott,** Houston, Miss.; Memphis (Tenn.) Hospital Medical College, 1906; member of the Mississippi State Medical Association; aged 55; died, September 17, of coronary thrombosis.

**William Orlando Martin,** Philadelphia; Medico-Chirurgical College of Philadelphia, 1898; member of the Medical Society of the State of Pennsylvania; aged 64; died, October 3, of edema of the lungs.

**Solon C. B. Fogel,** Allentown, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1874; member of the Medical Society of the State of Pennsylvania; aged 84; died, August 26.

**Ernest Albert Creighton** ⊕ Red Cloud, Neb.; Western University Faculty of Medicine, London, Ont., Canada, 1898; president of the Webster County Medical Society; aged 63; died, August 7.

**Joseph James Harrison Jr.,** Loudon, Tenn.; Chattanooga (Tenn.) Medical College, 1899; medical director of a sanatorium bearing his name; aged 57; died, October 7, of cerebral hemorrhage.

**Arthur Seymour Alderson,** Thayer, Ill.; Bennett College of Eclectic Medicine and Surgery, Chicago, 1906; aged 64; died, October 3, in St. John's Hospital, Springfield, of cerebral hemorrhage.

**Don C. Hughes** ⊕ Findlay, Ohio; College of Physicians and Surgeons, Baltimore, 1893; aged 63; on the staff of the Home and Hospital, where he died, September 25, of cerebral hemorrhage.

**Amzi Wolfe Hon,** Los Angeles; University of Louisville (Ky.) School of Medicine, 1892; served during the World War; aged 66; died, September 29, of atrophic cirrhosis of the liver.

**G. I. Jackson,** Harrison, Ark. (licensed in Arkansas in 1903); member of the Arkansas Medical Society; aged 57; died, September 13, in Everton, of pneumonia and angina pectoris.

**Don A. Barnhart,** Huntsville, Mo.; Marion-Sims College of Medicine, St. Louis, 1895; member of the Missouri State Medical Association; aged 67; died, September 19, of heart disease.

**John Joseph Murphy,** Sioux City, Iowa; John A. Creighton Medical College, Omaha, 1911; member of the Iowa State Medical Society; aged 48; died, September 20, of erysipelas.

**Joseph Austin Kilbourn** ⊕ Hartford, Conn.; College of Physicians and Surgeons, Baltimore, 1897; aged 73; died, October 13, of a hemorrhage from a ruptured esophageal varix.

**Joseph Milton Weaver** ⊕ Allentown, Pa.; Medico-Chirurgical College of Philadelphia, 1906; for many years on the staff of the Allentown Hospital; aged 52; died, October 6.

**James F. McDougal,** Forrest City, Ark. (licensed in Arkansas in 1903); aged 74; died, September 11, in the Gartly-Ramsay Hospital, Memphis, Tenn., of heart disease.

**William George Jacobs,** Cincinnati; Miami Medical College, Cincinnati, 1903; served during the World War; aged 55; died suddenly, September 26, of cerebral hemorrhage.

**William B. Kreider,** Goshen, Ind.; Chicago Homeopathic Medical College, 1879; past president of the Elkhart County Medical Society; aged 85; died suddenly, August 28.

**Percy Scott Richardson** ⊕ New Rochelle, N. Y.; Howard University College of Medicine, Washington, D. C., 1923; aged 35; died suddenly, October 3, of heart disease.

**George R. Bowers,** Knoxville, Tenn.; Lincoln Memorial University Medical Department, Knoxville, 1915; aged 52; died, September 27, of a self inflicted bullet wound.

**John Carlos Hick,** Eldorado, Ill.; Barnes Medical College, St. Louis, 1903; member of the Illinois State Medical Society; aged 59; died, October 3, of cerebral hemorrhage.

**Alexander W. Davidson,** Poplar Bluff, Mo.; American Medical College, St. Louis, 1876; formerly mayor of Poplar Bluff; aged 81; died, September 14, of nephritis.

**David A. McEwen,** Ogdensburg, N. Y.; Queen's University Faculty of Medicine, Kingston, Ont., 1895; aged 71; died suddenly, August 25, of cerebral hemorrhage.

**Francesco Carlucci** ⊕ New York; Regia Università di Napoli, Facoltà di Medicina e Chirurgia, 1889; aged 70; died suddenly, October 1, of coronary thrombosis.

**Herbert Charles Haskins,** Manitou Beach, Mich.; Toledo Medical College, 1896; aged 80; died, September 16, of acute nephritis, aortic stenosis and endocarditis.

**Archibald A. Booth,** Jackson, Tenn.; Vanderbilt University School of Medicine, Nashville, 1875; formerly county health officer; aged 83; died, August 17.

**Clarence Maris,** Columbus, Ohio; Starling Medical College, Columbus, 1881; aged 81; died, September 27, in St. Anthony's Hospital, of heart disease.

**Thomas William Causey,** Lakeland, Fla.; College of Physicians and Surgeons, Baltimore, 1909; aged 57; died, September 18, of coronary occlusion.

**Ernest Wolfgang Hammes,** St. Paul; Rush Medical College, Chicago, 1882; aged 79; died, in October, at St. Joseph's Hospital of cerebral arteriosclerosis.

**James W. Overpeck,** Hamilton, Ohio; Pulte Medical College, Cincinnati, 1882; aged 83; died, October 8, of carcinoma with metastasis and arteriosclerosis.

**William H. Hamersly,** Wilkes-Barre, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1883; aged 72; died, September 22, of appendicitis.

**Willis Jay Redfield,** Omaha; John A. Creighton Medical College, Omaha, 1900; aged 57; died, September 22, of hypertension and cerebral hemorrhage.

**Erneste Augustus Johansen** ⊕ San Francisco; Jefferson Medical College of Philadelphia, 1892; aged 68; died, September 9, of coronary occlusion.

**Leonard B. Bean,** Hartford, Ky.; Baltimore University School of Medicine, 1904; aged 79; died, September 23, of arteriosclerosis and pericarditis.

**Albert O. Hollie,** Chicago; Chicago College of Medicine and Surgery, 1911; aged 53; died, October 14, of gastric ulcer and hemorrhage and nephritis.

**Albert Llewellyn Tilton** ⊕ Los Angeles; University Medical College of Kansas City, Mo., 1899; aged 63; died, August 31, of angina pectoris.

**Richard Calvin Bromley,** Flat Woods, Tenn.; University of Nashville Medical Department, 1902; aged 63; died, October 4, of cerebral hemorrhage.

**Edmond Lewis Wyman,** Manchester Center, Vt.; New York Homeopathic Medical College, 1875; bank president; aged 91; died, September 27.

**Roy H. McKnight,** Kansas, Ill.; Dearborn Medical College, Chicago, 1906; aged 52; was found dead, October 1, of a self inflicted bullet wound.

**Thomas Smith Pitt,** Oxford, Mass.; Baltimore University School of Medicine, 1887; aged 70; died, August 10, of gastric hemorrhage and carcinoma.

**James Hancher Hawkins,** White Pine, Tenn.; Vanderbilt University School of Medicine, Nashville, 1888; aged 68; died, September 22, of uremia.

**T. Chalmers Fulton** ⊕ Philadelphia; Jefferson Medical College of Philadelphia, 1880; died suddenly, September 27, of coronary thrombosis.

**Herbert Leighton Fossey,** Miami, Fla.; University of Tennessee College of Medicine, Memphis, 1920; aged 41; was found dead, August 17.

**Marcus De Lafayette Jordan,** Velasco, Texas; Vanderbilt University School of Medicine, Nashville, Tenn., 1894; aged 64; died, August 15.

**Charles Elias Frain,** Haliburton, Ont., Canada; University of Toronto Faculty of Medicine, 1916; aged 40; was drowned, August 14.

**John J. Plumer,** Hailey, Idaho; Starling Medical College, Columbus, 1882; formerly bank president; aged 74; died, October 4, of nephritis.

**Cornelius Thomas Hurley,** Boston; College of physicians and Surgeons, Boston, 1905; aged 52; died, September 24, of coronary sclerosis.

**Homer Mantz Steifer,** Chico, Calif.; Baltimore University School of Medicine, 1895; aged 79; died, August 5, of cerebral hemorrhage.

**William L. Bandy,** Sedalia, Mo.; American Medical College, St. Louis, 1884; aged 77; died, September 30, of cerebral hemorrhage.

**Anna Louisa Kuhn,** Baltimore; Baltimore Medical College, 1883; aged 74; was found dead, October 7, of cerebral hemorrhage.

**Elmer Edgar Grable,** Chicago; National Medical University, Chicago, 1909; aged 73; died, October 17, of carcinoma of the liver.

**Lewis Sutton Aspey,** Scottdale, Pa.; Western Pennsylvania Medical College, Pittsburgh, 1899; aged 64; died, September 14.

**William C. Bryant,** Atlanta, Ga.; Southern Medical College, Atlanta, 1889; aged 67; died, September 13, of coronary occlusion.

**Elwood Eugene Arnold,** Los Angeles; Starling Medical College, Columbus, 1895; aged 67; died, October 3, of coronary sclerosis.

**Josephus Myers,** Alton, Ind.; Kentucky School of Medicine, Louisville, 1877; aged 83; died, September 12, of myocarditis.

**Charles Harrell,** St. Louis; Homeopathic Medical College of Missouri, St. Louis, 1904; aged 60; died, October 1, of heart disease.

**Arthur R. Hill,** Interlaken, N. Y.; Eclectic Medical Institute, Cincinnati, 1879; aged 80; died, October 16, of heart disease.

**R. H. Cowan,** Wytheville, Va.; Medical College of Virginia, Richmond, 1876; died, September 16, of organic heart disease.

**William Paul McCulloch** ⊕ Cheswick, Pa.; Kentucky School of Medicine, Louisville, 1891; aged 71; died, September 17.

**Frank Ernest Howard** ⊕ Olean, N. Y.; Trinity Medical College, Toronto, 1894; aged 63; died, July 3, of heart disease.

**Edward Francis Scanlon,** Scranton, Pa.; College of Physicians and Surgeons, Baltimore, 1890; aged 78; died, August 21.

**Leonidas Forrest Moore,** Stonewall, Okla.; Hospital College of Medicine, Louisville, 1907; aged 66; died, September 2.

**William August Shafer,** Chattanooga, Tenn.; Chattanooga Medical College, 1893; aged 63; died, August 30.

# Bureau of Investigation

## DAVID INGRAM

### A Swindler Who Has Long Worked in the Medical Field Goes to Jail

Each of two young colored women of Chicago who answered a classified advertisement for a "registered nurse" that was run in the Chicago *Tribune* August 1, 2 and 3 has been awarded $50 by the *Tribune* for helping to bring to justice a swindler who used the want-advertisement columns to obtain money under false pretenses.

The swindler in question is David Ingram, a colored man, who for some years has been posing as a physician. Ingram advertised in the *Tribune* that he wanted a registered nurse in connection with a proposed clinic to be opened in Chicago. Each of the two young colored women who received the *Tribune* award answered the advertisement and were engaged by Ingram for the position. Ingram required each to put up $25 cash bond "to cover possible breakage of delicate instruments." One of the young women later became suspicious and notified the police, who issued a warrant for Ingram, charging him with obtaining money fraudulently. Ingram disappeared, but was arrested on August 13 at the instance of the other young colored woman who had put up a bond. Ingram was sent to the Psychopathic Hospital, but was declared sane, and on August 31 Municipal Judge N. J. Bonelli found this swindler guilty and sentenced him to the county jail for one year.

The Bureau of Investigation of the American Medical Association has long had a record of Ingram. In May, 1924, Ingram was arrested, convicted and sentenced to six months' imprisonment in Detroit for practicing medicine without a license. The Department of Health of the City of Detroit at that time sent the American Medical Association some voluminous extracts of testimony taken during the trial of Ingram. At that trial Ingram testified that he was a graduate of the National University of Argentina. As a matter of fact, he is not a graduate in medicine at all, and is grossly ignorant of all things medical. The latter fact was brought out at the trial just mentioned when, on cross-examination made for the purpose of testing his knowledge of medicine, he declared that streptococci was a foreign remedy that went into medicines; that the position of the fallopian tubes depends on "what you were making an examination for"; that the period of gestation "logically depends on the diagnosis of the general system," and that seminal vesicles could be found in females. As a result of this cross-examination, Ingram's own attorney at the time told the court that he had advised Ingram to change his plea from "Not Guilty" to "Guilty." He changed it and was sent to prison for six months.

In December, 1928, the Connecticut State Department of Health at Hartford telegraphed the Bureau of Investigation for all information available on Ingram. This was sent. It was then reported by that Department that Ingram was at that time located in Waterbury, Conn., where he had rented a house and bought certain equipment on the installment plan, that he was also mixed up in some sort of "health institute" and was believed to be attempting to sell shares. The man had claimed that he had also practiced medicine in Camden, N. J., and in Philadelphia, as well as in Chicago. In the Connecticut case Ingram again pleaded guilty and was fined $100 and costs and given a thirty-day jail sentence.

In January, 1930, the Rochester Chamber of Commerce wrote to the Bureau of Investigation for information on Ingram, who was described as a colored man, "President and Treasurer of the People's Medical Laboratory" at New Brunswick, N. J. Ingram, it appeared, had turned up in Rochester for the alleged purpose of starting a branch of his business in that city. At that time Ingram claimed that his permanent address was in Chicago, although he was hazy about the details. The Rochester, N. Y., officials reported further that Ingram could neither read nor write English, could not spell the name of the street on which he claimed to have lived for five years in Chicago, did not know the name of the university in South America where he claimed to have had his training, and was working the following racket: He would get the privilege from various pastors of colored churches to give an "educational" talk to the congregation. In these talks Ingram would discuss various diseases and tell the audience that the medicines he put up would cure them of such diseases. He would then go to a retail druggist and attempt to get the druggist to carry his line.

The next report received about Ingram was in April, 1930, from a Williamsport, Pa., physician, who reported that Ingram was in his town, having come there about two months previously and started to practice medicine. The Williamsport physician, who was a trustee and district councilor of the Medical Society of the State of Pennsylvania, notified the local police that the man was not licensed to practice medicine in Pennsylvania. The doctor also called on Ingram, who displayed a government license for alcohol, but no diplomas or licenses to practice.

In December, 1930, the Scranton (Pa.) Better Business Bureau reported that Ingram had been working his scheme in that city. He carried an advertisement in the classified pages of the local newspapers, calling for a "competent stenographer and bookkeeper." Girls who answered the advertisement were offered the position at $30 a week, but were told that before they would be given the position, they would have to post a cash bond of $150 to show their good intentions. Ingram was reported to have offered the same position to dozens of girls under the same terms. The Scranton Better Business Bureau further reported that Ingram, who also used the aliases "William Hillis" and "Dr. William Hill," was arrested by the Scranton police on three charges of issuing worthless checks. The Better Business Bureau reported that Ingram had been bound over to the Lackawanna County grand jury for arraignment in the January (1931) sessions. We have no record of the outcome of this case.

It is obvious from what has been written that Ingram is a confirmed swindler. For some months to come he presumably will be where his activities will be restricted. Presumably, also, as soon as he gets out of jail he will be up to his old tricks.

# Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

## DELIVERY AFTER CESAREAN SECTION

*To the Editor:*—A woman, aged 40, has five children, 18, 16, 14, 9 and 3½ years of age. The weight of four was 10½, 11½, 9 and 10½ pounds at birth; all were normal deliveries except the last, when because of an hour-glass contraction of the uterus a cesarean section was done. The patient had never had any trouble during pregnancy before, except difficult labor at term. At present the patient is three months pregnant but is in very good health otherwise. What are the chances for having a normal delivery or would another cesarean section be indicated? Would therapeutic abortion be justifiable? Please omit name and address.

M.D., Texas.

ANSWER.—There is some difference of opinion as to whether or not delivery through the vagina should be permitted after a cesarean section. Some individuals believe that if a woman has had a cesarean section she should always be delivered by a cesarean section, chiefly because of the fear of rupture of the uterus during labor. On the other hand, most obstetricians are not of this opinion. Of course, if the reason for a cesarean section is a markedly contracted pelvis, all deliveries will have to be accomplished in the same way for full term babies. If, however, the indication for an abdominal operation was a temporary one, such as toxemia, contraction ring or some other complication, and this abnormality is not present at the time of subsequent confinements, it is not necessary to perform repeated cesarean section. This is especially true if the cesarean section was a low cervical one, because the incidence of rupture in a subsequent pregnancy or labor is very small. However, the incidence of rupture of the uterus after a classic operation is fairly high, especially if the patient is permitted to go into labor. Furthermore, many ruptures of the uterus after classic operations occur during pregnancy when the patient is unaware of danger and certainly not under the immediate observation of a physician. Since the incidence of uterine

rupture is far greater after classic operations than after the cervical operation, there is some justification for the dictum "Once a cesarean section always a cesarean section" for patients who have had classic cesarean sections. Regardless of which type of operation has been performed, if a woman is to be given a test of labor after one of the these operations she should be in a hospital under close supervision from the onset of labor, but preferably for a few days before term. In the case cited there need be no fear of a recurrence of the hour glass contraction. More important factors to be considered are the type of cesarean section performed, the course of the convalescence, the height and duration of fever, and any complications that may have followed the operation. A febrile convalescence often means an improper healing of the uterine wound; but a normal, uncomplicated convalescence does not necessarily imply perfect union of the uterine incision. Therapeutic abortion is definitely not indicated simply on the basis of a previous cesarean section. If this woman had a classic cesarean section, the physician should seriously consider performing another cesarean operation and sterilizing the patient a few days before term. Elderly multiparas who have had more than five children have a relatively high mortality and morbidity when delivered vaginally even when they do not have the added factor of a uterine scar.

## LATE CONGENITAL SYPHILIS

*To the Editor:*—A boy, aged 7 years, presents the following conditions. The frontal bosses are prominent, he has typical Hutchinson teeth, there is complete optic atrophy of the left eye, and in the right eye there is choked disk of 1½ diopters. Roentgen examination of the skull shows increased intracranial pressure, slight separation of the frontolambdoidal suture, a shallow sella turcica and complete absence of the anterior clinoid process. Hearing in both ears is normal but there is some impediment of speech. The heart is apparently normal, the spleen is just palpable, the knee jerks are slightly exaggerated and there is some unsteadiness of gait. The Kolmer and Kline reactions are 4 plus. Spinal fluid examination was not permitted. Will you kindly outline a standard of treatment and also give the status of the use of stovarsol in this type of case. Please omit name.

M.D., Oklahoma.

ANSWER.—Although there can be no doubt from the presence of various stigmas and the positive serologic reactions that this child has congenital syphilis, it is not so certain that he has neurosyphilis. The physical and roentgen changes in the skull are compatible instead with the diagnosis of intracranial tumor. Every effort should be made to arrive at the correct differential diagnosis before starting on treatment for syphilis. Consultation with a neurosurgeon, serologic examination of the spinal fluid and ventriculography would seem to be essential. If the child has a brain tumor, it is unlikely to be gumma in spite of the fact that he is known to have syphilis. Brain gumma large enough to produce these signs of increased intracranial pressure is unusual in either the congenital or the acquired infection. If the necessary diagnostic procedures are refused, it would of course be highly desirable to treat the child for syphilis since there is at least some chance that central nervous system syphilis may be the correct diagnosis. No improvement of course is to be expected in the optic atrophy. If the choked disk is due to syphilis it should recede promptly within a few weeks of the institution of antisyphilitic treatment with the arsphenamines and potassium iodide. If it does not do so it may be assumed that the intracranial process is probably not syphilitic and the intervention of a neurosurgeon is imperative.

If, on further study, the lesion proves to be syphilis or if it is necessary to institute antisyphilitic treatment without further study, it would be preferable to begin with arsphenamine 0.2 Gm. or with silver arsphenamine 0.1 Gm. at intervals of five to seven days, combined with potassium iodide by mouth in a dosage of 1.3 to 2 Gm. three times daily. Six or eight weeks of this sort of treatment will serve as a therapeutic test. Therapeutic shock and the Herxheimer reaction need not be feared. If the lesion proves on examination or therapeutic testing to be due to syphilis, it would probably be desirable to consider the prompt institution of fever therapy with malaria, though a definite pronouncement cannot be made as to this without further information. Whether with or without induced malaria, treatment should be continued for a minimum of two years with alternating courses of an arsphenamine, preferably arsphenamine or silver arsphenamine, and a bismuth compound. The bismuth preparation should be an insoluble salt, preferably the salicylate, given for a child of this age in a dosage of 0.1 Gm. weekly.

The status of stovarsol in this type of case is not as yet determined. The use of this drug in the treatment of congenital syphilis is in the experimental stage and at present is not recommended.

## PREGNANCY, VASOMOTOR RHINITIS AND ALLERGY

*To the Editor:*—A married woman of 24 with a questionable allergic family history has been complaining of sneezing, watery nasal discharge and nasal congestion, without itching or congestion of the eye or palate, for nine months. A somewhat similar attack occurred in childhood, at which time she was told of a deviated septum and improved rapidly with local nonoperative treatment and has been symptom free to the present time. The patient is now four months pregnant and has noted a general aggravation of symptoms in the past four months. She is now being treated by a rhinologist, who finds a deviated septum and two small polyps, with some objective improvement in the nasal mucous membranes but with little subjective improvement except for slight decrease in sneezing. I would appreciate a discussion and references to the literature, especially on the following points: Relation of symptoms to pregnancy: would you consider the aggravation of symptoms by pregnancy in favor of an allergic basis? Advisability and dangers of skin testing and specific treatment during pregnancy. Kindly omit name.

M.D., New York.

ANSWER.—The symptoms described in this case suggest the diagnosis of vasomotor rhinitis, or, as it is also known, hyperesthetic rhinitis, hypersensitive rhinitis or perennial hay fever. If definitely allergic, a better title would be allergic rhinitis.

The following observations, if present, would be diagnostic of allergy: (1) a history of some other allergic condition in the patient, e. g., urticaria, asthma, migraine, or gastrointestinal upsets due to specific foods; (2) a history of one or other allergic conditions in the family, especially the parents; (3) eosinophilia in the nasal secretion: from 25 to 100 per cent of the cells in allergic individuals are commonly found to be eosinophilic leukocytes (4) presence of a blood eosinophilia in many cases, i. e., over 4 per cent; (5) relief of symptoms from instillation of ephedrine or epinephrine, and (6) positive skin tests corroborated clinically. These skin tests are important and should be carried out completely with all antigens with which the patient comes in contact, such as pollens, epidermals, foods and miscellaneous substances, including orris root, house dust and cottonseed. The more the foregoing are positive, the surer is the diagnosis of allergy.

There seems to be no special reference in the literature regarding the relationship of pregnancy and vasomotor rhinitis. However, much work has been done on the relationship of pregnancy to bronchial asthma and hay fever, and as these belong to the same group as do most cases of vasomotor rhinitis, what follows will almost certainly apply to all three conditions.

The fact that the symptoms in this case have been aggravated by pregnancy would not be helpful at all in diagnosing an allergic basis. All evidence points to the fact that there is a definite relationship between allergic conditions, especially bronchial asthma, and pregnancy, but in most of the reported cases the patient is either better during pregnancy or entirely free from symptoms during this time, with a return of attacks after delivery. Occasionally the attacks of asthma occur during pregnancy. The latter would seem to be definitely related to sensitivity to some sex hormone. Bradford Green (Bronchial Asthma as a Complication of Pregnancy, THE JOURNAL, Feb. 3, 1934, p. 360) reports two cases of pregnancy complicated by asthma, one ending fatally during a severe paroxysm. He concludes that there are two groups of cases: (1) asthma due to pollens, proteins or some focus of infection, in which there was preexisting asthma with aggravation of attacks during pregnancy or in which attacks were first noted during pregnancy but continued after parturition, and (2) asthma due to sexual cycle disturbance, with subdivisions into cases in which attacks occurred at each menstrual period and were relieved during pregnancy and lactation and those in which attacks occurred only during pregnancy, with freedom from attacks when not pregnant. In Green's article there is an extensive bibliography.

Coca (in Asthma and Hay Fever, by Coca, Walzer and Thommen, Springfield, Ill., C. C. Thomas, 1931, pp. 189, 190, 203, 204, 341, 342) devotes considerable space to the relationship of pregnancy and menstruation to allergy and points out that most asthmatic women are worse just before and during menstruation and that most of these patients are better during pregnancy, though an occasional one will be worse or have symptoms only during pregnancy.

Fishberg (Ovarian Substance and Corpus Luteum in Asthma, *Med. & Surg.* **2**:26 [Jan.] 1918) reported favorably on the giving of ovarian substance and corpus luteum in thirty cases of asthma. He notes that a common characteristic of this type of patient is a tendency to adiposity and scanty menstruation. Other investigators have not been able to obtain equally good results by such treatment in similar cases.

The question as to the dangers of skin tests in allergic patients who are pregnant may be answered simply: Cuta-

neous tests can be done quite safely in all cases. Intracutaneous tests can be done safely if previous negative cutaneous (scratch) tests have been carried out. It would seem inadvisable to start with intracutaneous tests in the presence of pregnancy. While unlikely, it is possible that a constitutional reaction might follow an intracutaneous test; such a reaction might involve a contraction of the smooth muscle of the uterus with termination of pregnancy. For this reason it is likewise advisable to inject antigens, e. g., pollen extracts, in pregnant women with the greatest of caution. It is far better to underdose than to overdose. Some clinicians treat pregnant hay fever and asthma patients by repeated skin tests of the offending protein or pollen instead of injecting extracts. This procedure is a good one, gives excellent results and is to be recommended.

## INFECTION OF MOUTH AFTER INJECTION OF LOCAL ANESTHETIC

*To the Editor:*—A boy, aged 9 years 11 months, healthy, in good physical condition, somewhat overweight, of a family in good circumstances, had the lower left second temporary molar extracted, Jan. 29, 1934, a procaine infiltration about the root and mandibular nerve block being done. Two or three weeks later the family noticed a swelling in the left side of the face. The dentist admitted that he had four similar cases after extractions the same week. The dentist had had cultures taken of his stock Ringer's solution, which was used at the time, and a rich mycelium growth resembling Epidermophyton cruris was obtained. Also the first of these cases to present itself had been treated by lancing and the packing showed the same fungous growth. About six weeks later the boy's mother returned from a prolonged absence and became alarmed with the situation. She brought him to me, April 16. At that time he seemed in good condition and showed no signs except locally, not even the regional lymphatics being involved. There was a firm mass, possibly cystic, the size of a hickory-nut, in the gum tissue on the outer side of the jaw below the missing tooth, and one of similar size in the left cheek just in front of the angle of the jaw. There was no tenderness, edema or redness. I advised no treatment until more could be found out. I checked the story with the dentist and the laboratory man. The other cases are proving baffling to other physicians consulted. The dentist informs me that the incised mass in the one case was not benefited, that heat and massage seemed to aggravate another, and that two cases seemed to be gradually improving under no treatment. I have not observed these cases and therefore cannot judge this statement. Meanwhile a dentist, unknown to me, sent the boy to another dentist, who gave him daily treatments, locally, with a water-cooled ultraviolet machine. The boy was given seven daily treatments when the family again consulted me, and I advised stopping this treatment. There was no appreciable difference in the size of the masses, the skin of the cheek showed considerable erythema, and the boy was in a highly irate frame of mind. I understand on inquiry from an older dentist of great prestige in this community that the ultraviolet treatments are unjustified, as they have no authoritative standing as standard treatment. Are cases like this common? What is the probable condition, and what is the best treatment and management? What is the likelihood of these masses completing reabsorbing in time? Kindly omit name.

M.D., Pennsylvania.

ANSWER.—Fungous infections of the mouth are not uncommon, although most of them are superficial. Infections deep in the soft tissues are quite rare and usually are caused by organisms of the actinomyces group. However, Hardgrove (*J. Am. Dent. A.* **19**:483 [March] 1932) reported a case of monilia infection carried, in his opinion, into the tissues from the mouth by the needle used in making the anesthetic injection for the extraction of a single tooth. This infection ran a long and involved clinical course; large doses of potassium iodide, from 0.65 to 2 Gm. daily, were followed by improvement, but complete relief was obtained only after the use of neoarsphenamine. It was thought that a high protein diet contributed to this end. Castellani (Fungi and Fungous Diseases) states that fungi may attack any organ and system of the human body, the integumentary system being the most frequently and the nervous system the most rarely affected. The exact identification of the infecting organism is desirable in planning treatment; since the epidermophyton type mentioned is generally limited to infections of the external skin, the correctness of the diagnosis in this case must be questioned. However, such drugs as potassium iodide in large doses are commonly used. Vaccines made of the organisms isolated from the infected regions have been found beneficial in many cases. Surgical incision is without benefit, though excision may be successful, and ultraviolet radiation futile. Sterilized physiologic solution of sodium chloride and Ringer's solution and even distilled water, unless rigidly protected by aseptic methods, may contain noteworthy amounts of bacteria and kindred organisms after a few days. Best anesthetic practice implies daily sterilization of anesthetic solutions or sterilization in containers holding only one day's supply and discarded at the close of one day's use. As this is not an average practice in dental offices, it is a debatable matter whether the method used in these cases should be considered malpractice. Some of the milder infections of this character heal spontaneously.

## SILICOSIS OR PULMONARY FIBROSIS

*To the Editor:*—In an industrial plant large quantities of the following formula were ground up and mixed by hand with shovels:

| | | |
|---|---|---|
| No. 1. | Calcium magnesium chloride | 99 pounds |
| | Chromate of sodium | ½ pound |
| | Liquor pitch | ½ pound |
| No. 2. | Sodium chloride | 49 pounds |
| | Calcium magnesium chloride | 46 pounds |
| | Liquor pitch | 5 pounds |

Could workmen inhaling this dust contract a chronic poisoning or condition that might be called "calcicosis" or anything simulating the disease silicosis, affecting the air passages and lungs? Kindly explain results, if any, of such exposure, giving the effect of these chemicals on the mucous membrane. Please omit name.

M.D., West Virginia.

ANSWER.—Neither this dusty mixture nor any of its constituents will produce any characteristic dusty lung disease such as silicosis. Only silica ($SiO_2$) is capable of inducing silicosis, but any other mineral dust under conditions of prolonged and gross exposure may cause some increase in pulmonary fibrosis. If the relative potential harm of silica is rated as 100, these other nontoxic mineral dusts may be rated only on the order of 5 or 10. Moreover, the fibrosis is in itself not pathognomonic, since many other dusts, alkalis, acids or vapors may induce somewhat similar if not identical x-ray markings. However, it is recognized that harm other than pneumonoconiosis may be brought by either or both calcium chloride and sodium chromate. The former, owing to its avidity for water, sometimes causes erosions of the mucous membranes. Septal perforations are well known as frequent. Through similar action, chemical dermatitis may arise. The chromium salt, while much more of an irritant, is here used in so much smaller quantities as to make a practical hazard doubtful. Septal perforations are the characteristic response to the presence of chromate dust along the nasal membranes. To a minor extent, sodium chloride dust may lead to low grade irritation of the nasal tissues.

## TREATMENT OF PHLEBITIS

*To the Editor:*—Twenty months ago I treated a man, aged 23, for phlebitis of the left femoral and popliteal veins. Now he has a milder form of the condition and states that his recovery from the first attack was not complete, since on standing a considerable time he experiences a feeling of tiredness in his ankle; soon a painful sensation of tightness develops, which extends to the knee and later becomes a deep bursting sensation. He is then compelled to resort to a recumbent position, which gives relief though at times he has some cramping of the leg and thigh muscles at night. The present attack was caused by standing at his work six or seven hours a day for four weeks. The described symptoms and signs are accentuated. The tenderness is experienced only in a small area over the femoral vein about an inch below Poupart's ligament. The only superficial veins involved are those below the knee, and the dilatation is moderate. Measurement of the affected limb half way between the ankle and the knee and half way between Poupart's ligament and the knee showed it to be three-eighths inch larger than its fellow. The degree of swelling would be somewhat less than the figures indicate because the left leg is normally slightly larger than the right. The pain and discomfort are greater than the swelling of the involved limb seems to warrant. The patient is otherwise in vigorous health. The Kahn reaction on the blood was negative. The treatment has included iodine therapy, rest and elevation of the limb. Where is the site of the insufficiency in the return circulation and what is its cause and treatment? Please omit name.

M.D., Illinois.

ANSWER.—The successful treatment of deep phlebitis of the lower extremities requires a great deal of patience on the part of both physician and patient. There are no data to show whether the thrombosis of the femoral vein occurred during or following an infectious disease, an operation or an injury. Assuming, however, that the patient had an elevated temperature during the first and perhaps during the second attack, a careful search for the source of infection should be made. An inflamed tonsil, a dental root infection or a chronic prostatitis may be important, not necessarily as the etiologic factor, but as superimposed infection, which maintains or reactivates the thrombophlebitis. Should a focus of infection be found, it should not be eliminated until the attack of phlebitis has subsided; an arbitrary period of three months may be necessary before it is safe to eliminate infective foci without the danger of reactivating the thrombophlebitis. A tonsillectomy undertaken during the course of a subacute phlebitis may give rise to a renewed massive thrombosis followed by pulmonary embolism. The temperature, pulse and white cell count are fairly good indicators as to the activity of the clot. The sedimentation test of red cells is most sensitive in the detection of latent infection but it is not always available. It is customary to keep such patients in bed about ten days after the evening pulse has returned to normal. The swelling of the leg can be reduced by elevation, continuous heat, 15 grains (1 Gm.) of ammonium nitrate three times a day and intravenous injections of salyrgan in doses of from 0.5 to 2 cc. at three day intervals. Others

prefer calcium gluconate (10 cc. of a 10 per cent solution) or sodium thiosulphate in the same amount. While the calcium prevents the formation of edema by an action on capillary permeability, the sodium thiosulphate is claimed to prevent further thrombosis by interfering with clotting factors. The salyrgan has been most satisfactory.

In the diet one should aim at a moderate dehydration, limiting the fluid intake to a quart of water, avoiding much salt and sugar and providing for a regular daily bowel movement. When the patient gets out of bed an adequate elastic support must be supplied, reaching to the groin. Soreness of the femoral vein or a neuritis, which often accompanies a pelvic phlebitis, may be alleviated by roentgen therapy in small doses (from 90 to 100 roentgens at intervals of ten days).

The venous block, if the edema is unilateral, is generally in the femoral and external iliac veins. Nothing is known that will safely prevent embolism except that after four to six weeks the clot is usually so firmly organized that it is not apt to break loose.

## NEO-PROBILIN

*To the Editor:*—What may be said concerning the use of Neo-Probilin (Schering and Glatz, Inc.) in the correction of "biliousness" due to, as stated in the enclosed advertising folder, "dietetic errors, too much rich food, excess of coffee, tea, alcohol, exposure to cold and wet, overwork, great mental strain"?

M.D., Connecticut.

ANSWER.—A number of bile salt compounds have been actively promoted for a variety of disease conditions in recent years, of which Neo-Probilin, with the following formula, is typical:

| | |
|---|---|
| Bile Salts Combines | 1¼ gr. |
| Sodium Salicylate | ¼ gr. |
| Phenolphthalein | ⅓ gr. |
| Menthol | ⅛ gr. |

The recommended dose is two tablets, twice a day. "Bilious" is a "term popularly applied to disorders supposed to arise from a too free secretion of bile." In the "Actions and Uses" section of New and Nonofficial Remedies dealing with bile salt compounds it is stated that "they stimulate the secretory activity of the liver, increasing both the fluids and solids of the bile." From these observations it would appear contrary to good therapeutics to administer bile salts for "biliousness," lest the condition be considerably aggravated. The mixture has another inconsistency however, according to a leading professor of therapeutics, who has written that "a dose of ½ gr. of sodium salicylate twice daily is a joke"; and so it would appear to be in view of the recommended U. S. P. dosage of 1 Gm., or 15 grains (or thirty times the amount of salicylate exhibited in a single dose of Neo-Probilin). The menthol is present in the similarly modest concentration of two fifths of the U. S. P. dose (0.06 Gm., or 1 grain). The same consultant has further stated that "⅔ gr. of phenolphthalein twice a day will move any one's bowels."

Neo-Probilin, like many similar mixtures promoted under proprietary and noninformative, or therapeutically suggestive, names represents from a therapeutic point of view a combination of bile salts and phenolphthalein. That phenolphthalein is a valuable cathartic in cases in which no sensitivity exists cannot be doubted, but the possible occurrence, though relatively rare, of the hemorrhagic macular eruption that it occasionally produces should be borne in mind. Equally valuable in given conditions are the bile salt preparations, per se. There is, however, no pharmacologic justification for the joint administration of the two drugs, nor, of course, for the addition of sodium salicylate or menthol, particularly in such small concentration, and the medical profession is imposed on when it is asked to prescribe such a mixture under a proprietary name.

## ALOPECIA AREATA

*To the Editor:*—A young woman has lost nearly all of the hair on her head, including the eyebrows. The Wassermann reaction is negative and I can find no cause for the trouble. I know there has been some work done in the realm of glandular therapy along this line and am asking you for any advice you may be able to give me. She is much worried over the matter, as she is practically bald. She has never had any serious sickness.

H. K. OWENS, M.D., Elkins, W. Va.

ANSWER.—The case referred to is apparently one of alopecia areata, which is a disease characterized by loss of hair in circumscribed, rounded patches and may involve the scalp alone, the scalp and other areas such as the eyebrows and beard, and rarely the entire integument, in which case the term alopecia totalis is used. The etiology cannot always be determined, but credence is given chiefly to neuropathic, parasitic and toxic origins. In alopecia areata spontaneous regrowth of hair may occur in months or years; because of this fact it is difficult to evaluate treatment, and erroneous deductions may follow the introduction of new therapeutic measures. In recent years, claims have been made of successful treatment for alopecia areata by the administration of anterior pituitary orally and hypodermically and by subcutaneous implantation or oral administration of fresh whole anterior pituitary gland. Adequate scientific confirmation of such results following pituitary therapy appears to be lacking. Thyroid extract has been prescribed in alopecia areata and its use in cases exhibiting a low basal metabolism rate may be rational. Likewise, in certain instances, other forms of glandular therapy may be indicated for symptomatic treatment, though an etiologic relationship between glandular dysfunction and alopecia areata has not been definitely established.

While alopecia areata may occur in a syphilitic patient, in which case antisyphilitic treatment should be considered part of the management of the case, true syphilitic alopecia is more irregular or "moth eaten" in its appearance and usually occurs in early stages of the disease, in which case it is likely to be associated with other manifestations or history of syphilis and the Wassermann reaction is usually positive.

The accepted treatment of alopecia areata includes consideration of the local application of stimulating and parasitic lotions or ointments, ultraviolet ray exposures to produce active hyperemia, general tonic medication and symptomatic treatment, search for foci of infection, and attention to general hygiene and to the condition of the nervous system.

## DENTAL CARIES OF MOTHER AND PROSPECTIVE CHILD

*To the Editor:*—Can you outline for me a reasonable program of medicine which, in addition to a reasonable diet, might be calculated to reduce the chances of dental caries in a woman, aged 30, now two months along in her second pregnancy? What hope may be held that such a program of diet and medicine might also insure the child against future dental caries? Is there any information now available which suggests that calcium, phosphorus and vitamins might have any adverse effect on either mother or fetus? Please omit name.

M.D., New York.

ANSWER.—During pregnancy there is an insufficiency of calcium and phosphorus in the maternal tissues, resulting from the demands of the growing fetus. Likewise during lactation the formation of milk reduces the calcium and phosphorus content of the maternal body. Hence these minerals must be supplied in sufficient quantities during pregnancy and lactation to cope with the demands of the fetus in utero and the nursing baby. If these minerals are not supplied in the food or as medicinal preparations, the mother suffers. Among the chief symptoms and signs of lack of calcium and phosphorus are dental caries, puffiness of the hands and face, tingling and numbness of the fingers and toes, and evidences of tetany such as muscle contractures, which produce severe pain, muscle weakness and exhaustion. The chief foods that contain calcium are milk, vegetables and prepared cereals. Eggs contain large amounts of phosphorus.

It is not only necessary to have abundant calcium in the diet but it is essential that the body be able to absorb and utilize this mineral. Absorption depends on the presence of ergosterol, which is normally present in the skin and which acts only in the presence of natural or artificial sunlight. Activated ergosterol (viosterol) helps in the absorption of calcium from the gastro-intestinal tract and in deposition of the calcium in the bones. The utilization of calcium by the body is dependent on the proper functioning of the parathyroid glands. From the foregoing it is apparent that a pregnant woman should include in her diet throughout pregnancy an abundance of milk, eggs, vegetables, fruits, butter, whole grain cereals and cod liver oil, haliver oil or viosterol. If the patient cannot drink three or four glasses of milk a day, calcium and phosphorus should be prescribed in tablet form. During the summer months the sunshine aids in the utilization of the calcium in the diet but in the winter months, in climates where sunshine is at a minimum, it is most important that a pregnant woman take viosterol or haliver oil every day. These preparations and a proper diet help the mother's teeth and also the teeth of the unborn child. The simplest way in which to administer viosterol is to prescribe capsules containing 3 minims of halibut liver oil with viosterol 250 D. These capsules, which have in them both vitamins A and D, are taken three times a day during the days with little sunshine and twice a day at other times. Calcium, phosphorus and vitamins even when given in fairly large amounts do not have any deleterious effects on the mother or baby. In addition to protecting the mother's teeth by diet and medication, it is important that a pregnant woman see a dentist at least twice during her pregnancy both

for the purpose of having the teeth properly cleaned and for the detection of early caries, cavities or brittleness.

Any advice given as to the diet of the expectant mother should be applied to the individual with discretion and should be definitely related to all the specific problems in the management of the case. In general the diet calculated to provide liberally for the bone needs of the growing child is also the best for adequate tooth development in the child and the prevention of decay in the mother. Mineral-containing foods, such as milk and milk products, should be used liberally. It is extremely difficult to supply enough calcium and phosphorus in any other way. Adequate, even generous, allowance should be made for vitamins, especially D. The energy-supplying foods, especially carbohydrates, should be reduced nearly to the minimum. It is most important to consult one's dentist during pregnancy for early diagnosis of tooth decay and prompt filling of the cavities while they are small. There are no specific indications for any form of medical treatment during this period and there is no reason to believe that the ingestion of calcium, phosphorus and vitamins within the foregoing limit can harm the mother or child. Such a program may have some effect in insuring the child against future dental caries, although it is of relatively little significance as compared with factors that are brought to bear on the child after birth and probably to a less degree with those that have to do with the hereditary background. High individual immunity to dental decay is probably no different in origin than the same kind of immunity to other diseases.

## TREATMENT OF WASP STING

*To the Editor:*—I live in a community in which wasp and hornet stings are a common occurrence. I have used spirit of ammonia but find it unsatisfactory. Can you suggest a routine of treatment that will ease the sting without taking something by mouth? My patients see no connection in a wasp sting on the leg and a dose of bitter medicine by mouth. Please omit name.

M.D., Texas.

ANSWER.—The sting should be removed by lifting it out with the blade of a knife, not by grasping it to pull, for this may force more poison into the wound. Then the application of ammonia water will ease the pain. If the person is very susceptible and is stung on a limb, a constrictor should be placed proximal to the sting in order to prevent rapid absorption of the toxin.

Epinephrine may be injected locally in small amount. If a general reaction has already begun, larger doses, from 0.3 to 1 cc. of the 1:1,000 solution, may be given intramuscularly. Intravenous administration may be called for in severe cases, but the drug should be well diluted with physiologic solution of sodium chloride and given very slowly.

## USE OF X-RAYS FOR ACNE

*To the Editor:*—Kindly give me the best method of treating acne of the face and back with x-rays. Is this a good method: distance 20 inches, time four minutes, 4 amperes, 100 kilovolts. Filter?

F. M. SANDIFER, M.D., Greenwood, Miss.

ANSWER.—X-rays should not be used therapeutically either for acne or for any other skin disorder until the apparatus has been carefully standardized and the factors for the erythema dose determined either by ionization or by visible skin effects. The erythema or skin unit dose that is the equivalent in modern terminology of 300 roentgens should be determined on the flexor surface of a young and fair-skinned individual. The various factors, such as anode skin distance, milliamperage, voltage and time, may be changed only if the operator is familiar with the arithmetical method of computing dosage and the biologic laws that apply to roentgen rays. MacKee advises as a practical unfiltered technic for the beginner the use of the following constants: 2 milliamperes of current, 100 kilovolts, a distance of 8 inches, and an exposure of three minutes to produce an erythema dose or 300 roentgens. In the treatment of acne an erythema dose should never be administered. The average dose should be one-fourth skin unit, forty-five seconds with the foregoing factors, once weekly. Some dermatologists even use one-eighth skin unit once a week. The number of treatments will depend on the severity of the acne and from eight to twelve treatments are usually necessary to obtain results. The skin should be carefully watched for signs of excessive dryness, wrinkling or erythema. Furthermore, x-rays should not be used in every form of acne and great care must be employed to avoid the use of irritating topical applications during the treatment. The average patient is better off if he can be cured of the acne without the use of x-rays. Also the average practitioner before he uses x-rays in the treatment of cosmetic conditions should be well aware of the medicolegal aspects of the situation and should hesitate to do so without the proper training. MacKee's book on "X-Rays and Radium in the Treatment of Diseases of the Skin" should be consulted.

## VASOMOTOR NEUROSIS OF MAMILLA

*To the Editor:*—In a recent issue of THE JOURNAL mention is made of "vasomotor neurosis of mamilla and cancer." Please let me know what mamillary vasomotor neurosis is and how it is recognized. What is its significance, if any, to other gynecologic problems? Omit name, please.

M.D., California.

ANSWER.—The vasomotor neurosis of the mamilla has been repeatedly described in the German literature of recent years. Zimmermann described the condition in 1920 under the term of spasm of the mamilla. It was later described by several others, and Cohn (*Med. Klin.* **22**:1988 [Dec. 24] 1926) designated the condition as vasomotor neurosis of the mamilla.

Zimmermann, Beck and Rodecourt made further reports on the condition in 1929 and 1931. Attention was called to Rodecourt's report by a brief abstract in THE JOURNAL, Jan. 9, 1932, page 183.

In Zimmermann's report (*Deutsche med. Wchnschr.* **55**: 1418 [Aug. 23] 1929) it is stated that the patients have attacks of pains of a spasm-like and cutting type, accompanied by paling, erection and hardening of the mamilla. Some reports mention a radiation of the pains to the axilla.

Most of the observers point out that exposure to cold is an eliciting factor. The vasomotor neurosis of the mamilla has been observed during pregnancy and during lactation, but also in virgins.

Most of the women in whom it develops have a neuropathic constitution, but it has also been observed in women who are entirely free from nervous irritability. A connection with the menstrual period has not been noted.

Beck has taken particular notice of the vasomotor neurosis of the mamilla in the last few years and has called attention to the possibility of a connection with tumors of the heart.

## LOOSENESS OF SKIN OF NECK

*To the Editor:*—Will you please inform me if there is any worthwhile local treatment that can be prescribed for looseness of the tissues of the neck in a woman, aged 40? There is not any double chin and the patient is of medium weight, but the skin and neck tissue seem to sag more than usual. This does not follow any strenuous dieting with loss of weight but has occurred in a patient who has always been careful of her diet for fear that her weight might increase. Please omit name.

M.D., Ohio.

ANSWER.—Exercises to strengthen the neck muscles will improve the tone of the neck and reduce the laxness of the skin. These exercises are those of rotating, nodding and general body exercises such as swimming to strengthen the neck.

The skin and neck should be massaged and a good skin cream applied at night. In the morning after massage the neck should be douched with cold water.

This condition may be inherited and is often more marked in women who have had children.

In case the skin is very redundant, a plastic operation may be done but should be undertaken by a well trained surgeon only after other measures have failed.

## INCONTINENCE OF URINE

*To the Editor:*—Would you be kind enough to tell me which is the best treatment for incontinence of urine in women? This is in reference to the case of a woman operated on for renal tuberculosis four years ago, who had very intense cystitis before the operation, cystitis which improved extraordinarily after the extirpation of the kidney. Now she has an incontinence of urine for which I desire to know the best treatment.

J. E. CAVELIER, M.D., Bogota, Colombia.

ANSWER.—In order to outline the best treatment, one must know a good deal more about the patient than the statement that she has an incontinence of urine.

Incontinence of urine in this patient may be due to tuberculosis of the bladder following tuberculosis of the kidney. On the other hand, what appears to be an incontinence may be due to the presence of infection in the other kidney. Before advising the best form of treatment, therefore, it will be necessary to examine the patient with a cystoscope to determine whether or not she has active tuberculosis in the bladder at this time and also to examine the remaining kidney with a ureteral catheter to determine the presence or absence of infection there. And, finally, a careful examination of her pelvis should be made to rule out disease in the pelvis. In other words, a patient with this symptom and this history needs a complete urologic study.

### CELLULITIS OF PELVIC TISSUES

*To the Editor:*—A woman about 35 years of age has had one child, now 4 or 5 years old. At the time of this pregnancy she had a large fibroid tumor of the uterus. About two years ago she developed a pain in the right inguinopubic region and a fluid mass, which was operated on by another doctor, under local anesthesia. During the operation the sac broke and, according to the patient, nothing was removed, so I imagine that this was a hydrocele of Nuck. The pain continued the same after the operation. About three months ago I performed a supravaginal hysterectomy on account of the fibroid tumor, which weighed 6 pounds (2.7 Kg.) and filled the entire fundus uteri, and also removed the appendix. At the time of the operation I examined the right inguinal region internally and intramurally and could find nothing grossly pathologic that might be responsible for this pain. The pain still continues and is quite severe at times; it is not a steady pain; it seems to let up when the patient is sitting or standing and becomes worse when she lies down; it does not seem to make much difference what position she is lying in. Kindly suggest diagnosis and treatment. Please omit name.

M.D., Illinois.

ANSWER.—The most common cause of pain in cases of this character is cellulitis of the pelvic tissues with associated nerve involvement. The Elliott treatment, Priessnitz dressings, and other forms of hydrotherapy merit a trial. Codeine and acetylsalicylic acid are preferable to morphine for relief of the pain. Further surgical intervention might well be considered if the distress continues.

### ALCOHOLIC SOLUTION OF PHENOBARBITAL

*To the Editor:*—In reviewing your answer to the inquiry regarding "breast pain during menstruation" in THE JOURNAL, Sept. 30, 1933, page 1097, I notice your suggestion of alcoholic solution of phenobarbital or other sedatives. Please advise me why you suggest the use of alcoholic solution of phenobarbital instead of the powder or tablet form of phenobarbital. Please omit name.

M.D., South Carolina.

ANSWER.—The alcoholic solution of phenobarbital, commonly known as elixir of luminal or elixir of phenobarbital, is a widely used sedative which contains only one-fourth grain of the drug in each teaspoonful. It is preferable to the powder or tablet form chiefly because the dosage is smaller than is commonly available in solid form and because the amount administered may be readily increased or decreased to meet requirements.

### SERUM SENSITIZATION

*To the Editor:*—I am treating a boy for a severe attack of scarlet fever. About two years ago he had an illness which another doctor diagnosed as scarlet fever and gave him a therapeutic dose of antitoxin. If I should give the boy antitoxin now is there any danger of anaphylaxis due to previous treatment? How long is sensitization generally supposed to last? Some years ago in a laboratory in Chicago I injected serum into the ear vein of a rabbit that had a similar treatment some weeks before. The rabbit died almost immediately, so since that time I have had a wholesome respect for serum sensitization.

F. J. HACKNEY, M.D., Centralia, Wash.

ANSWER.—There is danger of anaphylaxis. Sensitization may last indefinitely. It is possible to test for sensitization to horse serum by intradermal injection of a dilute solution of the antitoxin.

### ASCITES WITH OVARIAN CARCINOMA

*To the Editor:*—I have an elderly patient with an ovarian carcinoma. On two occasions I have withdrawn 7 quarts of fluid from the abdominal cavity. Is it good surgery and safe to tie in a catheter the next time, if the dressings are aseptically changed? If not, why? If so, why can't it be done in any form of ascites?

M.D., Connecticut.

ANSWER.—It is not good surgery to leave a catheter in the peritoneal cavity for drainage of ascites. Regardless of the asepsis in changing the dressings it is impossible to avoid the development of infection around the catheter or any foreign body passing through the skin. There is little danger from repeated aspirations if reasonable care is used.

### CALCIUM AS ANTIDOTE TO RESPIRATORY DEPRESSION

*To the Editor:*—For the respiratory depression following the intraspinal injection of magnesium sulphate, calcium chloride is used intravenously as an antitdote. What is the physiologic chemistry involved in this antidotal effect? Has calcium chloride been used to overcome the respiratory depression of spinal anesthesia? In what respect would the use of calcium chloride vary in the two cases? Please omit name.

M.D., Nebraska.

ANSWER.—The essential nature of the antagonism is not understood. All that is known is that several electrolytes are required, in a certain ratio, in order that cells may perform their functions. The antagonism is strictly quantitative, excess of calcium also acting as a depressant to nerve and muscle. Calcium chloride has probably not been used in attempts to overcome the respiratory depression in spinal anesthesia and it would be most surprising if it should be found of value, because this depression is due to the ascent of the anesthetic and intraspinal blockage of the nerve roots that supply the muscles of respiration. There is no evidence that calcium antagonizes the effect of local anesthetics on the substance of nerves.

### RELIEF OF SCIATIC PAIN

*To the Editor:*—With focal infection eliminated so far as is possible, what is the best procedure for the relief of sciatic pain? What is the technic for injection of the sciatic nerve? What is the best solution for injection? Is this an office procedure? What internal medication is recommended? Please omit name.

M.D., Massachusetts.

ANSWER.—The treatment of symptomatic sciatic pain depends on the etiologic diagnosis. In this connection the recent work of Yeoman and of Freiberg and Vinke on the importance of the piriformis should be considered. The work of Danforth and Wilson should also be consulted.

For the symptomatic relief of pain one should consider caudal epidural injection, using 0.5 per cent solution of procaine hydrochloride, a pelvic belt, manipulation under anesthesia, and fusion operation.

Internal medication with 3 Gm. of sodium salicylate in tap water, by rectum, can be repeated at infrequent intervals to relieve pain.

### DETERIORATION OF DIGITALIS

*To the Editor:*—Given a reliable preparation of digitalis leaves, will it retain most of its potency for six months when put up in "sealed" gelatin capsules? Please omit name.

M.D., New Jersey.

ANSWER.—It will.

### MUSCLE CRAMPS DURING SLEEP

*To the Editor:*—I have been interested in the recent remarks on muscle cramps during sleep appearing in Queries and Minor Notes, first by a New York physician inquiring as to a possible cause, and in the issue of September 29 by Dr. C. A. Mills of the University of Cincinnati, who states that he has observed almost complete and very prompt relief by the administration of dilute hydrochloric acid. In line with this treatment is the advice by THE JOURNAL to the New York physician to give an acid salt such as ammonium nitrate.

I began a study of this common clinical condition about six months ago at the San Francisco Relief Clinic. I have studied to date fifteen patients. Thirteen of them had complete relief with calcium administered two to three times daily before meals. Calcium gluconate was used exclusively in all but one case. In this case calcium chloride was given and the gluconate substituted later. The two worked equally well. It is doubtful whether one of the two patients who failed to get relief should have been included in this study, since he had cramps not only in the legs but also in the hands and during the day as well as the night. He probably will be shown to have one of the better recognized types of tetany. The other failure was a man seen first about a week ago, who after one week had no relief whatever. He has not been thoroughly studied as yet. In addition to these fifteen patients, I have given calcium to perhaps eight other persons who complained of this condition, all of whom had equally prompt and good relief. These were friends and relatives who were not closely studied.

I have done fasting serum calcium determinations on three of this group with readings of 12, 12.2 and 13 mg. per hundred cubic centimeters. I am now engaged in estimating the diffusible-nondiffusible ratios in some of these patients. Estimation of the diffused calcium would undoubtedly be of greater value than that of the diffusible, but I am unwilling to do spinal punctures in the clinic, and so far I have not been fortunate enough to get any patients with this condition in the hospital. No phosphorus determinations have been done, but in view of the calcium readings they will probably be normal. Clot retraction has been normal in three cases studied.

The condition is common. It seems to be preponderately present in middle life and older age. Nearly all the patients have varicose veins. Diabetes has not been present in any of the fifteen studied. Several of the patients volunteered the information that they were much more apt to have cramps during a night following a day when they were on their feet an unusual lot or when they had an unusually hard day's work.

It was the usual thing to have a patient say he had relief after two or three doses.

Further studies done on these patients have included complete histories, physical examinations, urinalyses, blood Wassermann and Kahn tests, and particularly a careful examination of the peripheral circulation. A rather large percentage of the patients also had a symptomatic purpura, noted by the patients simply as a tendency to bruise. With the exception of this and the varicose veins, no condition was found with any undue frequency in the group.

In view of the equally good results obtained with calcium and acid salts, I have wondered whether the basic physiologic disturbance might not be a disturbance in the ionization of calcium.

This study is being enlarged and completed for publication at a later date.

ROBERT A. STEVEN, M.D., San Francisco.
Assistant in Medicine, University of California Medical School.

# Council on Medical Education and Hospitals

## COMING EXAMINATIONS

AMERICAN BOARD OF DERMATOLOGY AND SYPHILOLOGY: *Written (Group B candidates).* The examination will be held in various cities throughout the country, April 29. *Oral (Group A and Group B candidates).* New York, June 10. Sec., Dr. C. Guy Lane, 416 Marlborough St., Boston.

AMERICAN BOARD OF OPHTHALMOLOGY: San Antonio, Texas, Nov. 12; Philadelphia, June 10. Sec., Dr. William H. Wilder, 122 S. Michigan Blvd., Chicago.

AMERICAN BOARD OF OTOLARYNGOLOGY: San Antonio, Texas, Nov. 13. Sec., Dr. W. P. Wherry, 1500 Medical Arts Bldg., Omaha.

ARIZONA: *Basic Science.* Tucson, Dec. 18. Sec., Dr. Robert L. Nugent, Science Hall, University of Arizona, Tucson.

ARKANSAS: *Regular.* Little Rock, Nov. 12. Sec., Dr. A. S. Buchanan, Prescott. *Eclectic.* Little Rock, Nov. 13. Sec., Dr. L. L. Marshall, 820 W. 14th St., Little Rock. *Homeopathic.* Fayetteville, Nov. 13. Sec., Dr. Allison A. Pringle, Eureka Springs.

CALIFORNIA: *Reciprocity.* Los Angeles, Dec. 5. Sec., Dr. Charles B. Pinkham, 420 State Office Bldg., Sacramento.

CONNECTICUT: *Regular.* Hartford, Nov. 13-14. *Endorsement.* Hartford, Nov. 27. Sec., Dr. Thomas P. Murdock, 147 W. Main St., Meriden. *Homeopathic.* New Haven, Nov. 13. Sec., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven.

DELAWARE: Wilmington, Dec. 11-13. Sec., Dr. Harold L. Springer, 1013 Washington St., Wilmington.

FLORIDA: Tampa, Nov. 12-13. Sec., Dr. William M. Rowlett, Box 786, Tampa.

KANSAS: Topeka, Dec. 11-12. Sec., Dr. C. H. Ewing, Larned.

KENTUCKY: Louisville, Dec. 4-6. Sec., State Board of Health, Dr. A. T. McCormack, 532 W. Main St., Louisville.

MAINE: Portland, Nov. 13-14. Sec., Board of Registration of Medicine, Dr. Adam P. Leighton Jr., 192 State St., Portland.

MARYLAND: *Regular.* Baltimore, Dec. 11-14. Sec., Dr. Henry M. Fitzhugh, 1211 Cathedral St., Baltimore. *Homeopathic.* Baltimore, Dec. 11-12. Sec., Dr. John A. Evans, 612 W. 40th St., Baltimore.

MASSACHUSETTS: Boston, Nov. 13-15. Sec., Board of Registration in Medicine, Dr. Stephen Rushmore, 144 State House, Boston.

NATIONAL BOARD OF MEDICAL EXAMINERS: *Parts I and II.* The examinations will be held in medical centers where there are five or more candidates, Feb. 13-15. Ex. Sec., Mr. Everett S. Elwood, 225 S. 15th St., Philadelphia.

NEBRASKA: Lincoln, Nov. 22-23. Dir., Bureau of Examining Boards, Mrs. Clark Perkins, State House, Lincoln.

NORTH CAROLINA: *Endorsement.* Raleigh, Dec. 3. Sec., Dr. Benj. J. Lawrence, 503 Professional Bldg., Raleigh.

OHIO: Columbus, Dec. 3-6. Sec., Dr. H. M. Platter, 21 W. Broad St., Columbus.

OKLAHOMA: *Reciprocity.* Oklahoma City, Dec. 11. Sec., Dr. J. M. Byrum, Mammoth Bldg., Shawnee.

OREGON: *Basic Science.* Portland, Nov. 17. Sec., Mr. Charles D. Byrne, University of Oregon, Eugene.

SOUTH CAROLINA: Columbia, Nov. 13. Sec., Dr. A. Earle Boozer, 505 Saluda Ave., Columbia.

TEXAS: Galveston, Nov. 20-22. Sec., Dr. T. J. Crowe, 918 Mercantile Bank Bldg., Dallas.

VIRGINIA: Richmond, Dec. 12-14. Sec., Dr. J. W. Preston, 803 Medical Arts Bldg., Roanoke.

WISCONSIN: *Basic Science.* Milwaukee, Dec. 15. Sec., Prof. Robert N. Bauer, 3414 W. Wisconsin Ave., Milwaukee.

## Connecticut July Examinations

Dr. Thomas P. Murdock, secretary, Connecticut Medical Examining Board, reports the written examination held in Hartford, July 10-11, 1934. The examination covered 9 subjects and included 70 questions. An average of 75 per cent was required to pass. Twenty-eight candidates were examined, 25 of whom passed and 3 failed. The following schools were represented:

| School | PASSED | Year Grad. | Per Cent |
|---|---|---|---|
| Yale University School of Medicine | | (1932) (1933) 79.7, 82.6, 83.5 | 79.3, |
| George Washington University School of Medicine | | (1933) | 77 |
| Georgetown University School of Medicine | | (1933) 76.5, 76.8, 80.2* | 75.3, |
| Howard University College of Medicine | | (1933) | 76.4 |
| Loyola University School of Medicine | | (1934) | 75 |
| Univ. of Md. School of Med. and College of P. & S. | | (1934) | 75* |
| Boston University School of Medicine | | (1933) | 77.5 |
| Harvard University Medical School | | (1928) 82.9, (1931) | 79.6 |
| Tufts College Medical School | | (1914) 75, (1934) | 77.5 |
| University of Michigan Medical School | | (1932) | 75 |
| Columbia University College of P. & S. | | (1933) | 80.9* |
| Cornell University Medical College | | (1933) | 85.7* |
| Temple University School of Medicine | | (1932) | 81.5 |
| Queen's University Faculty of Medicine | | (1924) | 75 |
| University of Toronto Faculty of Medicine | | (1932) | 84 |
| Schlesische-Friedrich-Wilhelms-Universität Medizinische Fakultät, Breslau, Germany | | (1932)† | 82.3 |
| Osteopath ‡ | | | |
| | FAILED | | |
| Georgetown University School of Medicine | | (1932) | 66.6 |
| Johns Hopkins University School of Medicine | | (1932) | 69.2 |
| Creighton University School of Medicine | | (1933) | 72.7 |

Twenty-one physicians were successful in the oral examination for endorsement held in Hartford, July 24. The following schools were represented:

| School | PASSED | Year Grad. | Endorsement of |
|---|---|---|---|
| Yale University School of Medicine | | (1930), (1930),* (1932, 2), (1933, 2) | New York, N. B. M. Ex. |
| State University of Iowa College of Medicine | | (1929) | Iowa |
| Johns Hopkins University School of Medicine | | (1923) | *N.B.M. Ex. |
| University of Maryland School of Medicine and College of Physicians and Surgeons | | (1932) | N. B. M. Ex. |
| Harvard University Med. School. | | (1926) | New York, (1932) N. B. M. Ex. |
| Tufts College Medical School | | (1931) | N. B. M. Ex. |
| University of Michigan Medical School | | (1919) | * New York |
| University Medical College of Kansas City, Mo. | | (1913) | New Jersey |
| Washington University School of Medicine | | (1927) | Illinois |
| Columbia Univ. College of Physicians and Surgeons. | | (1896) | New York |
| Cornell University Med. College. | | (1930) | New Jersey, (1933) *N.B.M.Ex. |
| Long Island College of Medicine | | (1931) | * New York |
| University of Rochester School of Medicine | | (1931) | *N.B.M. Ex. |
| University of Toronto Faculty of Medicine | | (1924) | R. Island |

* License has not been issued.
† Verification of graduation in process.
‡ No average grade reported. Examined in medicine and surgery. License has not been issued.

## Iowa Reciprocity and Endorsement Report

Mr. H. W. Grefe, director, Division of Licensure and Registration, reports 7 physicians licensed by reciprocity and 1 physician licensed by endorsement during August 1934. The following schools were represented:

| School | LICENSED BY RECIPROCITY | Year Grad. | Reciprocity with |
|---|---|---|---|
| College of Medical Evangelists | | (1934) | Kansas |
| Northwestern University Medical School | | (1933) | Illinois |
| Creighton Univ. School of Med. | | (1929) | Nebraska, (1931) Ohio |
| University of Nebraska College of Medicine. | | (1924), (1931) | Nebraska |
| University of Wisconsin Medical School | | (1931) | Wisconsin |
| | LICENSED BY ENDORSEMENT | | |
| University of Illinois College of Medicine | | (1929) | N. B. M. Ex. |

## ADDITIONAL HOSPITALS APPROVED

The Council on Medical Education and Hospitals of the American Medical Association has given its approval to the following hospitals since the publication of the last previous list in THE JOURNAL, June 30:

### Hospitals Approved for Intern Training

St. Joseph Hospital, San Francisco.
St. Francis Hospital and Sanatorium, Colorado Springs, Colo.
St. Mary's General Hospital, Lewiston, Me.
Burbank Hospital, Fitchburg, Mass.
Providence Hospital, Holyoke, Mass.
Mercy Hospital, Springfield, Mass.
Bryan Memorial Hospital, Lincoln, Neb.
St. Joseph's Hospital, Yonkers, N. Y.
Valley Hospital, Sewickley, Pa.

### Hospitals Approved for Residencies in Specialties

Denver General Hospital, Denver. Medicine and pathology.
Elgin State Hospital, Elgin, Ill. Psychiatry.
Spring Grove State Hospital, Catonsville, Md. Psychiatry.
Belchertown State School, Belchertown, Mass. Mental deficiencies.
Danvers State Hospital, Hathorne, Mass. Psychiatry.
Hastings State Hospital, Ingleside, Neb. Psychiatry.
Atlantic City Hospital, Atlantic City, N. J. Medicine-pediatrics and surgery-gynecology.
White Haven Sanatorium, White Haven, Pa. Tuberculosis.
Baroness Erlanger Hospital, Chattanooga, Tenn. Surgery.
Hopemont Sanitarium, Hopemont, W. Va. Tuberculosis.
Milwaukee County Hospital for Mental Diseases, Wauwatosa, Wis. Psychiatry.

### Hospitals Approved for Additional Residencies

Gallinger Municipal Hospital, Washington, D. C. Ophthalmology-otolaryngology.
University Hospital, Ann Arbor, Mich. Urology, orthopedics, neurosurgery, thoracic surgery and tuberculosis.
New York Post-Graduate Medical School and Hospital, New York City. Ophthalmology, otolaryngology, pathology and radiology.
Good Samaritan Hospital, Cincinnati. Pediatrics.
City Hospital, Cleveland. Thoracic surgery, obstetrics, otolaryngology, ophthalmology and communicable diseases.
Pennsylvania Hospital, Philadelphia. Cardiology, medicine, pathology, radiology, surgery and urology.
Memphis General Hospital, Memphis, Tenn. Gynecology.
State of Wisconsin General Hospital, Madison, Wis. Neurology and urology.

# Book Notices

**The Ancestry of the Long-Lived.** By Raymond Pearl and Ruth DeWitt Pearl. Cloth. Price, $3. Pp. 168, with 21 illustrations. Baltimore: The Johns Hopkins Press; London: Oxford University Press, 1934.

This book brings together the products of an extensive statistical genetic study of longevity, most of which has been previously published in various numbers of *Human Biology* during the past four years. Chapters IV and IX contain largely new material. The method employed is that of comparing two groups of living persons (propositi), the longevous group and a more or less ordinary group, selected from the family history records gathered for other purposes by the department of biology. For convenience the latter group is called the FHR series. The two groups have one feature in common: all six immediate ancestors of the individuals in both series are dead, a necessity of the case if complete ages are to be known. The longevous group is made up of sibships containing at least one person 90 years of age or over and still living.

A new concept is introduced; namely, the total immediate ancestral longevity (called TIAL). This consists of the sum of the completed ages of the six immediate ancestors. The TIALS of the two groups—long series and FHR series—are compared with regard to the mean TIAL and in many other ways, with illuminating results.

The book contains many tabulations and a great deal of statistical procedure. It is not an easy book to read in detail, but the general results are reasonably easy to comprehend. The chief results of the study are in part:

"The mean and median TIALs of the nonagenarians and centenarians are over 60 years, 16 per cent higher than those of the FHR series, indicating statistically the importance of ancestral longevity of the individual." Thus heredity is one important factor in longevity. The author recognizes other factors than heredity. He does not believe that longevity is inherited according to any known mendelian mechanism.

The study of the effects of moderate and excessive use of alcohol revealed the facts that 41.4 per cent of the longevous individuals were moderate drinkers, 4.1 per cent more than was found among the random sample of general population; that 3.7 per cent of the longevous males were heavy drinkers; and more than half (56.6 per cent) of the longevous individuals were total abstainers. In general, "the evidence from this study clearly indicates that the moderate use of alcoholic beverages throughout life is not incompatible with the attainment of great longevity."

This admirable piece of statistical work reveals nothing distinctly new or startling but puts on a sound basis much that had been believed to be true on the basis of casual observation and the study of isolated pedigrees.

**Vital Cardiology: A New Outlook on the Prevention of Heart Failure.** By Bruce Williamson, M.D., M.R.C.P., Physician Royal Northern Hospital, London. Cloth. Price, $5. Pp. 344, with illustrations. Baltimore: William Wood & Company, 1934.

"The object of this treatise is to present clinical cardiology as a primary study of the two essentials which govern the cardiac output; namely, rate and force." With these words the author begins the preface. The opening chapters concern themselves with a discourse on the general ineffectiveness of modern medical practice and the fallacy of neglecting rate and force for murmurs and electrocardiograms in the study of heart disease. We are told (in italics) that "the heart has no intelligence"; that the new outlook on the prevention of heart failure should rest on the principle of "the prevention of involuntary wasteful living." The vagus and sympathetic nerves "are constantly on the watch for weakness in each other." The author's "apnea test" is said to distinguish "psychic tachycardia from all other types, whether physiological or pathological." On page 68 we read that "a mild degree of tachycardia is not an infrequent accompaniment of old age." On page 86 it is stated that "bradycardia is frequently met with in old age, especially in men." In part II are given discussions of various disturbances in rate and rhythm, of valvular defects and of the "myocardial potential." Part III concerns itself with symptoms, including precordial pain. Part IV deals with treatment.

In the therapy of coronary thrombosis, epinephrine is considered as a drug of great value, "given in 10 minim doses hypodermically four-hourly during the first few days, when the blood pressure is low, whether heart block is present or not." In the application of "preventive treatment" it is stated that "rate and force are the only factors which can possibly affect the efficiency of the heart and all other abnormalities must be interpreted in terms of their influence on these two essentials." Morphine may be safely used "in adults who still retain 60 per cent or more of active lung tissue estimated by auscultation; i. e., dry vesicular breathing is present in the major portion of the total lung field." Prolonged rest for young people after rheumatic endocarditis is believed to be "a definite factor in the high incidence of mitral stenosis we see today," for "stasis and stenosis are firm allies." "In cyanosis of purely cardiac origin, oxygen therapy is valueless." A half ounce of brandy or whisky in hot milk given at 2 a. m., when cerebral thrombosis has already occurred, "undoubtedly helps recovery and tends to prevent further thrombosis." "If the sole action of digitalis—and there is ample evidence in support of this—is stimulation of the vagus, which slows the heart, it follows that the sole indication for the use of this drug is tachycardia." According to this concept, other signs or symptoms of myocardial insufficiency are of no importance.

In the preface, the author predicts that "critics will find much material to discuss. A new view in medicine, to be worthy of discussion, must be based on adequate factual evidence. Dr. Williamson is quite evidently a physician with a considerable clinical experience. But in his book a majority of the ideas set forth, as well as the inferences drawn from the observation of patients, are unsupported by specific data. Only two references to the literature are cited in the entire work. In seeking advocates for such unorthodox views, it is essential to set forth fully the facts on which they are based. The volume, therefore, cannot be recommended, for the theories advanced are unproved, the deductions based on clinical observation are often fallacious and many of the principles of therapy outlined are, in the light of current knowledge, unsound.

**Tratamientos de la intoxicacion cianhidrica: Sus mecanismos fisiologicos.** Por Enrique Hug, profesor de farmacologia, Facultad de ciencias medicas, Rosario. Paper. Pp. 151. Buenos Aires: El Ateneo, 1934.

Professor Hug presents the results of his researches on cyanide poisoning carried out during the last four years. The tables and charts and most of the text have appeared previously in South American (Spanish) and French journals. An extensive review of the literature makes this a complete contribution. A work such as this has the advantage of presenting in collected form the important results and conclusions of an expert and authority. Hug includes a complete discussion of the work of North American authors. The first part discusses the toxicity of hydrocyanic acid and its salts and the mechanism of the poisoning. The second part takes up the antidotes according to the newer classification, namely, hyposulphite and colloidal sulphur, reducing sugars, methemoglobinizing substances, other antidotes and combined antidotes. Chapter VIII discusses results in man. The monograph ends up with general conclusions, a bibliography and an index. The author naturally devotes considerable space to a discussion of the methemoglobinizing agents. He must be credited with having recognized the great practical possibilities of methemoglobin formers in the treatment of cyanide poisoning. As a result of his studies, he introduced the use of sodium nitrite, which greatly exceeds in effectiveness all previously tried antibodies, including methylene blue. Hug was among the firt to recognize that the antidotal actions of nitrite and methylene blue rest on a common basis, namely, on methemoglobin formation, which results in the formation of the nontoxic cyanmethemoglobin. He presents extensive chemical and pharmacologic data on the antidotal action of methemoglobin and admirably proves his case for it. As for the choice of an antidote in human cases of cyanide poisoning, Hug, like all other students of this subject, proceeds from experimental results on injected animals and cites cases successfully treated. Apparently he is not certain which antidote should be regarded as the best. He recognizes the value of methylene blue but is inclined to favor sodium nitrite, possibly combined with sodium thiosulphate. In South America the nitrite and thiosulphate have been tried successfully and safely. Probably most North

American physicians and pharmacologists would not yet be ready to adopt nitrite as the first choice, in view of the recent successes with methylene blue without attendant difficulties or serious consequences. It may be some time before the final choice of antidote is settled, as the present uncertainties lie on the clinical side and not on the experimental. Surely this monograph will prove valuable and profitable to all those handling cyanide and treating, or likely to treat, emergency cases of poisoning. No medical library, and no researcher who has failed to keep abreast of recent contributions on poisoning, can afford to be without a copy.

**L'intoxication par les somniferes (intoxication barbiturique).** Par Charles Flandin, médecin de l'Hôpital Bichat, Jean Bernard, interne des hôpitaux de Paris, et François Joly, interne des hôpitaux de Paris. Paper. Price, 20 francs. Pp. 116, with 6 illustrations. Paris: G. Doin & Cie, 1934.

Until recently, opiates were the favorite poisons for suicide; within the last decade, and most especially the last two or three years, barbiturates have taken first place. This, no doubt, is due to the fact that there are severe restrictions to the sale of opiates, while any one, anywhere, can obtain any quantity of poison of the barbituric acid series, enough to produce death. Until this condition is rectified by restrictive legislation, studies such as this are greatly needed. Flandin has had the opportunity of studying, in collaboration with two interns at the Bichat Hospital, sixty-two cases of this form of poisoning within the last eighteen months in one general medical service. This number of cases in a rather short span of time may serve to show the frequency of the occurrence of this condition as well as the relatively high degree of authority with which Flandin and his assistants speak on the subject.

This work is the most thorough presentation of barbiturate poisoning yet available, as may be gathered from the fact that it contains chapters on the chemistry and experimental physiopathology of the barbiturates, the methods of identification, the pathologic anatomy, the clinical etiology, the symptomatology, and the diagnosis, prognosis, treatment and prophylaxis, besides a bibliography covering more than twelve pages.

The prognosis, it is pointed out, cannot be based on the depth of the coma, because a complete coma is frequent in perfectly curable cases, while an agitated sleep may end in death. The presence of the corneal reflex is favorable, as is mydriasis, while miosis is unfavorable. The dose ingested and still more the time since it was taken before treatment is instituted are directly proportionate to unfavorableness of prognosis. The only true sign of improvement is recovery of consciousness. Even though the patient may again become unconscious, his recovery is imminent. While the reappearance of reflexes is a favorable sign, such reactions may be merely temporary in a grave case. While calm, regular respiration is favorable, irregular respiration is unfavorable. While the signs of pulmonary atelectasis do not modify the prognosis, those of secondary pulmonary complications, such as a pneumonia, greatly increase the gravity of the case. Enfeeblement of circulation is often absent: when it is present, the prognosis is grave. Anuria is part of the clinical picture of certain fatal forms. A normal secretion of urine is a favorable sign, provided it is well sustained. If the temperature does not exceed 104 F. and if it falls to normal within twenty-four hours, the case is likely to be favorable. If it exceeds 104 or is continuous, or if hypothermia prevails, death is likely to ensue. If the leukocyte formula is approximately normal, it constitutes an index of great gravity, no matter what the temperature. If, on the other hand, a leukocytosis appears in connection with a normal temperature or a temperature falling to the normal, it is likely to be a favorable omen. If the leukocytosis accompanies hyperthermia, it does not have the same favorable significance, provided it is possible to eliminate a visceral localization.

In the treatment, the principal factor is constant and unremitting care. Gastric lavage is, of course, essential if the patient is seen early; but, if the patient is first seen late, the indication for lavage may be disputable, as the poison is usually not found at that time in the stomach and lavage is not without danger of causing aspiration pneumonia. Abstraction of from 500 to 600 cc. of blood may be of some value, especially if followed by transfusion of from 500 to 800 cc. of blood, which if repeated would secure a veritable washing of the blood. Dextrose saline solution should be administered continuously either by rectum or, in serious cases, intravenously. It is indeed the single most important therapeutic agent against barbiturate poisoning. The patient should be kept in the half sitting posture to prevent pulmonary complications. Oil is recommended for purgation. In case of heart failure, strophanthin (0.25 mg.) intravenously and camphor as well as epinephrine may be of use. But the most important antagonist is strychnine in enormous doses, even in doses exceeding the minimum fatal dose (0.03 Gm.) for normal individuals. In moderately severe cases, one should give intravenous injections of 0.01 Gm. of strychnine hourly; in very severe cases one should start with 0.05 Gm. (given very slowly) by intravenous injection and repeat this dose hourly or alternate the larger with the smaller dose hourly. The indications for letting up on the dosage of strychnine are either amelioration of the coma or signs of strychnine poisoning, indicated by the return of the reflexes, Chvostek's sign or more rarely by rigidity of the lower extremity. These come on rapidly, within two to ten minutes, often while the needle is still in the vein. The author accepts the theory of phylaxis, advanced by Billard, according to which strychnine, of value in preventing union of the depressant poison with the nerve centers, unfortunately is powerless to displace that which has become fixed in the nerve centers. If strychnine fails, one might try picrotoxin in doses of possibly 0.6 mg. given hypodermically. Coramine may be given in doses of from 3 to 10 cc. of the commercial solution in the twenty-four hours. Against respiratory depression, caffeine is the auxiliary remedy of choice. Inhalation of oxygen with the addition of carbon dioxide should be resorted to as soon as respiration seems to become insufficient, with artificial respiration reserved for final recourse if death seems imminent. It should be stated here that the safety and efficiency of these huge doses of strychnine advocated by the authors is by no means generally accepted or admitted.

The prevention of this form of poisoning must be accomplished by legal enactment by the addition of the barbiturates to the list of poisons covered by the antinarcotic law.

**Die Haut- und Geschlechtskrankheiten: Eine zusammenfassende Darstellung für die Praxis.** Herausgegeben von Prof. Dr. Leopold Arzt und Prof. Dr. Karl Zieler. Lieferung 17, Band V. Tripper der Mundschleimhaut, der Nase, der Ohren, des Mastdarms, des Auges, Allgemeinkrankheiten bei Tripper. Von Prof. Dr. Leo Hauck. Weicher Schanker (Ulcus molle). Von Prof. Dr. Otto Grütz. Lymphogranulomatosis inguinalis. Von Prof. Dr. W. Frei. Venerisches Granulom. Von Prof. Dr. W. Frei. Paper. Price, 9.40 marks. Pp. 347-524, with 26 illustrations. Berlin & Vienna: Urban & Schwarzenberg, 1934.

This portion of the fifth volume of this system of skin and venereal diseases is devoted in the first place to gonorrhea of the mouth, nose, ears, rectum, eyes, lymph channels, blood vessels, skin, heart, joints, muscles and tendons, discussed by Professor Hauck of Erlangen. Then soft chancre (ulcus molle) is considered by Professor Grütz of Wuppertal-Elberfeld. Thirdly, a venereal disease much in the limelight today, lymphogranuloma inguinale, is discussed from different angles by Professor Frei of Berlin, the deviser of the "Frei reaction," now so widely used in diagnosis and differential diagnosis of this disease. Professor Frei also devotes a few pages to granuloma inguinale. The physician desirous of a general survey of these diseases will find them, on the whole, clearly discussed in this small volume, at least, as far as gonorrhea, soft chancre and lymphogranuloma inguinale are concerned. Granuloma inguinale, on the other hand, is a rarity in Germany, and Professor Frei offers nothing new.

All the articles present a complete knowledge of the latest literature on the subjects, and while complete reference lists are not furnished, owing to lack of space, the reader is told where he can find them. The portions devoted to gonorrhea of the skin and mucous membranes, to soft chancre and to lymphogranuloma inguinale seem to be particularly well done. In handling the treatment of chancroidal bubo, the author has made no note of the injection treatment of the bubo; e. g., with Mencière's solution. Professor Frei feels more strongly than ever that inflammatory strictures of the rectum are due to lymphogranuloma inguinale.

The subvolume in boards is well printed, on excellent paper, and has twenty-four illustrations and two colored plates. All

of them are good except the representation of a case of granuloma inguinale. As is usual in most foreign books, there is no index, though the reader will find a tolerable division of the contents at the beginning of each section.

**L'infarctus du myocarde: Etude expérimentale électrocardiographique et clinique.** Par Eduardo Coelho, professeur à la Faculté de médecine, Lisbonne. Paper. Price, 35 francs. Pp. 212, with 103 illustrations. Paris: Masson & Cie, 1934.

Professor Coelho has produced a good monograph on the experimental, electrocardiographic and clinical aspects of myocardial infarction. Included in this work is a brief but excellent survey of the literature with a bibliography of 209 titles. He has presented animal experimental work of his own, consisting of ligation of the coronary vessels in the dog, and he also reports twenty-eight personal cases in medical practice. In summarizing the medical records of his patients Coelho has reported that twenty-seven showed the characteristic chest pain of coronary thrombosis. Only one failed to complain of pain and that one suffered from dyspnea instead. Twenty of the cases showed a considerable drop in arterial blood pressure, twenty-three a definite elevation in temperature, six a pericardial friction rub, and four acute pulmonary edema. Five of his twenty-eight patients died, three in the course of a second crisis of coronary thrombosis and two with acute pulmonary edema. The other twenty-three patients are "clinically cured," some for more than four and one-half years. Electrocardiographic study of these twenty-eight cases showed thirteen of the so-called $T_1$ type (probably indicative of thrombosis of the anterior descending branch of the left coronary artery with infarction near the apex of the left ventricle), ten of the $T_2$ type (with probable thrombosis of the right coronary artery and infarction at the base of the left ventricle posteriorly), two of both types, one with bundle branch block, and two with paroxysmal ventricular tachycardia (both these patients died). Two cases showed auriculoventricular block. The monograph ends rather abruptly without any discussion of treatment. It would be well worth while for the author to include a section on treatment and a further discussion on prognosis if a second edition is published.

**Handbuch der inneren Medizin.** Herausgegeben von G. v. Bergmann und R. Staehelin. Unter Mitwirkung von V. Salle. Begründet von L. Mohr und R. Staehelin. Band I: Infektionskrankheiten. Bearbeitet von R. Doerr, A. Eckstein und anderen. Third edition. Cloth. Price, 96 marks. Pp. 1,299, with illustrations. Berlin: Julius Springer, 1934.

This is the first volume of the third edition of a system comprising the entire field of internal medicine. In accord with the custom prevailing, each chapter has been written by a different author who by his special inclination and research work seemed to be particularly competent to attend to the task allotted to him. In this way, following a general discussion of pathogenic micro-organisms and the reactions of the carriers, are in detail described all the infectious diseases occurring in human beings. While on account of financial conditions the volume of the preceding editions had to be cut down somewhat, this was not done at the expense of information offered but simply resulted in a more concise presentation. This publication takes first place as a text and reference book. The world's literature is extensively considered and properly indexed; 395 illustrations promote the understanding of the text.

**The Operative Treatment of Collum Femoris Fractures.** By Sven Johansson, M.D., Surgeon-in-Chief, "Allmänna och sahlgrenska sjukhuset," Göteborg, Sweden. Paper. Pp. 148, with 137 illustrations. Copenhagen: Levin & Munksgaards Forlag, 1934.

The author presents a method of treatment which he has found successful. Of a series of 3,635 patients admitted with a total of 3,940 fractures and dislocations, 390, or about 10 per cent, had fractures of the neck of the femur. Seventy-five per cent of the patients were over 60 years of age. The author quotes Radasch, who described the "medullary index": that is, the relation between the compacta and the bone marrow changes with increasing age, the medullary cavity growing wider while the cortex becomes thinner. He emphasizes the importance of taking roentgenograms, not only in the ventral-dorsal but also in the lateral projection. He advises an additional lateral roentgenogram of the unaffected hip. Johansson believes that interposition of tissue delays but does not necessarily prevent complete osseous union. In his 390 cases there was a primary mortality of about 14 per cent. He states that the so-called Whitman method should be called the Whitman-Lorenz-Löfberg method, because each of the three worked the method out independently of the other two. He advises against inward rotation before one has obtained maximal abduction and extension. He believes in Cotton's artificial impaction.

Johansson's method is as follows: After carefully replacing the fracture he drills a fine, stiff, metal wire in the axis of the neck from a point slightly below the trochanter. After the position of the wire has been controlled both ventral-dorsally and laterally, it is used as a guide for the introduction of a metal nail of the same shape as that employed by Smith-Petersen but with the modification that it is provided with a central canal so that it can be threaded on the wire. No plaster cast is applied. The patient may be put in a Braun splint or with one sand bag on each side as support. After two weeks, active movements are begun cautiously and electrotherapy is instituted. The average confinement to bed has been thirty-one days. The average stay in the hospital was about eighty days. He has operated on about fifty patients and in only one did he fail to obtain satisfactory position and fixation by his method. He usually employs spinal anesthesia.

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# *Medicolegal*

**Medical Practice Acts: Massage to Alleviate Pain as Constituting Treatment of Disease.**—Thompson gave massages to two persons, one of whom had a pain in her shoulder and the other had a pain in the neck. He was convicted in the circuit court, Montgomery County, of treating diseases of human beings without a license. He appealed to the court of appeals, Alabama, where the judgment of conviction was reversed. *Thompson* v. *State*, 153 So. 469. The state then applied to the Supreme Court of Alabama for a writ of certiorari to review the decision of the court of appeals.

The medical practice act of Alabama provides, in part, as follows:

> Any person who treats, or offers to treat diseases of human beings . . . without . . . a certificate of qualification from the state board of medical examiners, shall be guilty of a misdemeanor. . . .

In this case, said the Supreme Court, in order to warrant a conviction of Thompson, the state must show that he treated or offered to treat *diseases* of human beings. This the state failed to do. The term "disease," continued the court, means more than a mere temporary pain or disorder. In *Merriam* v. *Hamilton*, 64 Or. 476, 130 P. 406, cited and followed by the Alabama court, it was held that a complaint charging that the plaintiff had a backache was not sufficient as a charge that she had a disease, the court in that case observing:

> True enough, the plaintiff says she had a backache, but pain is not a disease; it is only the symptom of some disorder of the body which in turn may not amount to disease or trauma.

To adopt the state's contention in the present case, said the court, would render any good Samaritan a lawbreaker who tried to ease or alleviate a pain by rubbing, or a bruise or temporary swelling or soreness with a poultice or hot water bottle. The record, in the opinion of the court, disclosed no violation of the medical practice act. The petition to review the decision of the court of appeals was therefore denied.—*Thompson v. State (Ala.), 153 So. 470.*

**Insanity: Irresistible Impulse and Criminal Responsibility.**—Eatman was indicted for burglary. He pleaded that at the time of the commission of the alleged offense he was insane. At the close of all the evidence, the trial court instructed the jury to disregard all the testimony offered with reference to the insanity of Eatman. A conviction followed and Eatman appealed to the Supreme Court of Mississippi.

The sole question on appeal, said the Supreme Court, was whether the testimony relative to the insanity of the accused should have been submitted to the jury. Every lay witness except one was without doubt as to the sanity of the accused. Two witnesses testified concerning some peculiarities in the

conduct of the accused noted on isolated occasions, but, the court said, peculiarities of conduct on occasions do not amount to proof of insanity, else, in the judgment of many people, most of the people, other than themselves, would be insane. All the expert witnesses testified that the accused was a psychopathic delinquent without psychosis, that he had the capacity or ability to distinguish right and wrong but was deficient in inhibitory powers. The test of criminal responsibility, continued the court, is the ability of the accused, at the time he committed the act, to realize and appreciate the nature and quality thereof—his ability to distinguish right and wrong. The defense of irresistible or uncontrollable impulse is not available unless the uncontrollable impulse springs from a mental disease existing to such a degree as to overwhelm the reason, judgment and conscience. The reasons for the general rejection of the defense of uncontrollable impulse, in Mississippi, were set forth as follows in *Smith* v. *State*, 95 Miss. 786, 49 So. 945, 27 L. R. A. (N. S.) 461, Ann. Cas 1912A, 23:

> It is known among medical writers as lesion of the will. Its peculiarity is said to be that, while the mental perception is unimpaired, the mind is powerless to control the will; that while its unhappy subject knows the right, and desires to pursue it, some mysterious and uncontrollable impulse compels him to commit the wrong. This kind of insanity, if insanity it can be called, though sometimes recognized by respectable courts, and still oftener, perhaps, by juries seeking an excuse to evade the stern dictates of the law, is properly rejected by the authorities generally. The possibility of the existence of such a mental condition is too doubtful, the theory is too problematical, and too incapable of a practical solution, to afford a safe basis of legal adjudication. It may serve as a metaphysical or psychological problem to interest and amuse the speculative philosopher, but it must be discarded by the jurist and the lawgiver in the practical affairs of life.

An expert witness in the present case testified that there was no practical or dependable way to tell whether the accused was in fact unable to resist the criminal impulses. The evidence, concluded the court, established the fact that the accused had the capacity to distinguish between right and wrong. The action of the trial court, therefore, in instructing the jury to disregard the testimony with reference to the insanity of the accused, was affirmed.—*Eatman v. State (Miss.), 153 So. 381.*

**Workmen's Compensation Acts: Total and Permanent Disability Attributed to Traumatic Neurosis.**—Duotwal was struck on the head by a 28-pound radiator, which fell several feet from its stacked position. Two fellow workers assisted him to the office of the company doctor, about 600 feet away. The company doctor treated a scalp wound and had the injured employee removed to a hospital. After the third day at the hospital, the scalp wound having healed, the injured workman was given permission to go home but he at first refused to leave the hospital. He acted and talked strangely, contending that he should stay at the hospital for at least two months because, as he said, he had no clothes. Later in the day, however, he did leave the hospital but owing to his nervous condition he was returned in about two weeks for a second stay of ten days. He complained of dizziness and headaches but otherwise appeared well nourished and not acutely ill. In a proceeding under the workmen's compensation act of Illinois, it was claimed on behalf of Duotwal that, following the blow on his head, a striking personality change took place. The injured employee, it was claimed, was rendered useless for remunerative employment; that the injury to his head had affected his mind, resulting in abnormal suspicion, distrust and hostility. Prior to the accident, the evidence showed, the employee had been a steady and reliable worker and had been regarded as jovial and optimistic. His family physician testified that his condition after the injury was distinctly different from his condition prior thereto. After the injury, according to the testimony of this physician, Duotwal was highly nervous and irritable and would become startled at any noise. He could not walk in a straight line, had a wild stare from bulging eyes, lacked coordination in speech, became discouraged and depressed, and had no interest in himself or his surroundings. An expert in mental diseases testified that Duotwal was a paranoiac and that he would get worse, not better, and that he could not carry on any work except simple tasks under supervision. Another expert witness testified that Duotwal was suffering from traumatic neurosis. An arbitrator of the industrial commission awarded compensation for total and permanent disability, which award was sustained, on review, first by the industrial commission and subsequently by the circuit court of Cook county. The employers thereupon brought the case before the Supreme Court of Illinois for review.

The causal connection between the accident and Duotwal's incapacity for remunerative labor, said the Supreme Court, was established by the evidence. There was testimony showing that Duotwal was suffering from neurosis of traumatic origin which incapacitated him from doing anything of a remunerative nature. We have held, continued the court, that an employee is totally and permanently disabled when he is unable to make some contribution to industry sufficient to justify payment to him of wages. That there may be a later improvement in Duotwal's condition, said the court, does not defeat the award. If there is such improvement the employer has his remedy by appearing and asking for a modification of the award. The court thereupon affirmed the judgment of the circuit court in favor of the injured employee.—*Ford Motor Co. v. Industrial Commission (Ill.), 189 N. E. 498.*

**Workmen's Compensation Acts: Refusal to Undergo Operation for Hernia.**—An employee suffering from an operable hernia, said the Supreme Court of Oklahoma, must accept a tendered operation before he can claim compensation for total permanent disability. The employee may not, however, be compelled to take a risk of life, however slight, in order that the pecuniary obligation created by law against his employer may be minimized. This rule arises out of the high respect which the law has for human life. In the present case, the employee had worked for the United Service Street Car Company for fifteen years. During that time he had on two occasions, prior to the instant case, developed a hernia. The condition was corrected in each case by operation. On Jan. 27, 1933, the employee developed a third hernia from a strain. An operation tendered by the employer was performed but was unsuccessful. A second operation was offered, which the employee refused to undergo, basing his refusal on the advice of his physician that, owing to the presence of scar tissue in the vicinity of the hernia and other physical conditions, it would be practically impossible to perform a successful operation and that such an additional operation would be extremely dangerous. The state industrial commission awarded compensation for total and permanent disability, and the employer appealed to the Supreme Court of Oklahoma.

The burden of proving that the tendered operation was simple, safe and reasonably certain to effect a cure, said the Supreme Court, was on the employer. Where conflicting evidence is introduced concerning the safety of a tendered operation and the probability that a cure would be effected thereby, the reasonableness of the refusal of the injured employee to accept such operation resolves itself into a question of fact to be determined from the evidence. The evidence in the present case, as viewed by the Supreme Court, supported the finding of the industrial commission that the employee was permanently and totally disabled, that the tendered operation was useless and dangerous, and that therefore the employee's refusal to undergo the operation was reasonable. The award of the commission was consequently affirmed, with certain modifications.—*United Service Street Car Co. v. McCarter (Okla.), 30 P. (2d) 456.*

## *Society Proceedings*

### COMING MEETINGS

American Society of Tropical Medicine, San Antonio, Texas, November 14-16. Dr. Henry E. Meleney, Vanderbilt University School of Medicine, Nashville, Tenn., Secretary.

Pacific Coast Society of Obstetrics and Gynecology, Oakland and Del Monte, Calif., November 21-23. Dr. Clarence A. De Puy, 230 Grand Avenue, Oakland, Secretary.

Puerto Rico, Medical Association of, Santurce, Dec. 14-16. Dr. Julio R. Rolenson, Box 3403, Santurce, Secretary.

Radiological Society of North America, Memphis, Tenn., December 3-7. Dr. Donald S. Childs, 607 Medical Arts Building, Syracuse, N. Y., Secretary.

Southern Medical Association, San Antonio, Texas, November 13-16. Mr. C. P. Loranz, Empire Building, Birmingham, Ala., Secretary.

Southern Surgical Association, Sea Island, Ga., Dec. 11-13. Dr. Robert L. Payne, 142 York Street, Norfolk, Va., Secretary.

Western Surgical Association, St. Louis, December 7-8. Dr. Albert H. Montgomery, 122 South Michigan Boulevard, Chicago, Secretary.

# Current Medical Literature

## AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in continental United States and Canada for a period of three days. Periodicals are available from 1925 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

### American J. Digestive Diseases and Nutrition, Chicago

**1**: 425-536 (Sept.) 1934

Natural Chemical Factors Governing Gastric Motility. J. P. Quigley, Cleveland.—p. 425.

Chronic Inflammatory Lesions of Small Intestine (Regional Enteritis). P. W. Brown, J. A. Bargen and H. M. Weber, Rochester, Minn.—p. 426.

Rôle of Gastro-Intestinal Tract in Conditioning Deficiency Disease: Significance of Digestion and Absorption in Pernicious Anemia, Pellagra, "Alcoholic" and Other Forms of Polyneuritis. M. B. Strauss, Boston.—p. 431.

Cinchophen Poisoning: Report of Seven Cases, with Especial Reference to Rare Instance Complicated by Multiple Gastric Ulcers. L. Bloch and D. H. Rosenberg, Chicago.—p. 433.

*Some Metabolic and Nutritional Aspects of Chronic Arthritis. R. Pemberton, Philadelphia.—p. 438.

Pancreatitis, with Especial Reference to Its Nonsurgical Treatment. V. C. Rowland, Cleveland.—p. 441.

Résumé of Newer Physiology of Pancreas. A. C. Clasen, Kansas City, Mo.—p. 445.

*Diabetes Mellitus, Its Physiologic Essence and Rational Treatment. W. N. Boldyreff, Battle Creek, Mich.—p. 453.

Pathogenic Protozoa in the United States. R. Hegner, Baltimore.—p. 456.

Report of Committee "on Survey of Enzyme Tests, as Performed by Members of the American Gastro-Enterological Association." A. H. Aaron, Buffalo; H. L. Bockus, Philadelphia, and A. C. Ivy, Chicago.—p. 462.

Bacteriologic, Roentgenologic and Clinical Study of Ulcerative Colitis. T. T. Mackie, New York.—p. 466.

Experimental Study of Lower End of Esophagus: I. Effect of Diaphragm on Esophagus and Cardio-Esophageal Orifice in Normal and Bilaterally Phrenicectomized Animal. II. Physiologic Studies. M. Feldman and S. Morrison, Baltimore.—p. 471.

Lowering the Mortality from Appendicitis. J. R. Verbrycke Jr., Washington, D. C.—p. 477.

Importance to Gastro-Enterologist of Inheritance in Disease. Madge Thurlow Macklin, London, Ont.—p. 480.

Diagnosis and Treatment of Amebiasis. S. Simon, New Orleans.—p. 486.

History of Gallbladder Disease: Résumé of Symptoms. M. E. Rehfuss, Philadelphia.—p. 488.

Studies on Alterations of Function in Biliary Tract Disease. I. S. Ravdin, Philadelphia.—p. 496.

Diseases of Portal Vein: Review of One Hundred and Twenty-Seven Instances. J. F. Weir and D. C. Beaver, Rochester, Minn.—p. 498.

Clinical Use of Tests of Hepatic Function. C. H. Greene and H. F. Shattuck, New York.—p. 505.

Significance of Alkalosis in Treatment of Peptic Ulcer S. A. Wilkinson and Sara M. Jordan, Boston.—p. 509.

*Aluminum Hydroxide in Treatment of Peptic Ulcer. I. H. Einsel, W. L. Adams and V. C. Myers, Cleveland.—p. 513.

Niche as Criterion in Healing of Peptic Ulcer. J. Buckstein, New York.—p. 516.

Treatment of Peptic Ulcer Based on One Thousand Four Hundred and Thirty-Five Cases. E. S. Emery Jr., Boston.—p. 520.

Rationale for Treatment of Peptic Ulcer. A. B. Rivers and T. J. Dry, Rochester, Minn.—p. 522.

Incidence of Gastrojejunal Ulcer Following Gastro-Enterostomy. J. W. Hinton and R. E. Church, New York.—p. 526.

**Metabolic and Nutritional Aspects of Chronic Arthritis.**—Pemberton stresses the importance of a restricted but balanced diet in arthritis, with the curtailment of that fraction which affords most of the calories in the ordinary American diet: the carbohydrates. A diet of this nature, while valuable in a restricted sense to all arthritic patients, can have intensive application only to those cases that have been found on study to be suitable for it. In many sufferers from arthritis and in a great majority of all advanced cases, the gastro-intestinal tract presents certain dysfunctions and anatomic configurations. The most obvious evidences of this are atony, enteroptosis, often masked stasis, dilatation and elongation of the large intestine and frequently hypochlorhydria. This picture is, of course, not pathognomonic for arthritis. Under suitable dietetic control the gastro-intestinal tract so dysfunctioning and deformed may be made to approach or even reach a picture of normality, more or less coincidentally with the restoration of health in general. Fletcher believes that an unappreciated vitamin deficiency plays a determining part in this sequence of events in arthritis. In suitable cases restoration toward normal with relief from the arthritis will follow short periods of low calory feeding from which all vitamins are excluded definitely. A diet relatively low in carbohydrate and relatively high in protein has, as a necessary physiologic consequence, a depletion of the water reserves of the body and under this influence the edema can be observed to disappear. For every drachm of carbohydrate stored 3.6 Gm. of water is retained, and an obvious therapeutic corollary to this is the avoidance of such storage and of such water retention. This subsidence of swelling to be observed under these conditions is accompanied by a constant loss of weight and the establishment of a negative water balance and usually by clear-cut diminution of pain. The several major systems of the body are intimately interdependent one on the other. Conditions that tend to restore gravitational and other equilibrium in the vascular system, meaning chiefly the finer distribution of it, promote subsidence of the excess tissue fluids. At least part of the stiffness and pain experienced in arthritis is referable to excess fluids confined within the limiting membranes of various types of structures, such as the tendon sheaths. Other tissues, and even cellular units, could be expected to be affected comparably. These observations emphasize that arthritis is a systemic disease and that only a wide-angled outlook on it can hope to have successful consequences in the treatment of any considerable number of sufferers from it. A coordination of several lines of therapy, based on sound physiologic premises, should control definitely the disease in about 80 per cent of all cases.

**Diabetes Mellitus.**—Boldyreff states that, if the small pancreatic duct is ligated in a dog and the large duct is used for a fistula, all the pancreatic juice will flow outside (this operation is functionally identical to a complete pancreatectomy, although much easier of execution). In twenty-four hours this dog becomes diabetic, although his so-called internal pancreatic secretion is as before. Such dogs develop not only glycosuria and azoturia but also lipemia (the carbohydrate, fat and protein metabolism is affected). All the diabetic symptoms are present in a severe degree in such dogs. If the ligature from the small pancreatic duct is removed, severe diabetic symptoms decrease at once. But if the fistula of the larger pancreatic duct is closed the animal gradually recovers completely. Therefore, removal from the animal or human body of the external pancreatic secretion leads to diabetes. Hence the direct conclusion to treat diabetes by introduction of pancreatic juice. When administered by mouth, both digestion and metabolism are improved. Diabetes is a disease of the digestive organs (mainly of the pancreas) and therefore diabetic patients should have their digestion in proper order. First of all, the digestive work should be minimized; then anything capable of hindering digestion or irritating digestive organs should be avoided. The effect of insulin is not direct, but it is actually accomplished through the secretion of the gastric, pancreatic and intestinal juices caused by insulin. Since insulin is toxic and its effect is fleeting, a more suitable and rational medicine should be found. As such a medicine, the pancreatic juice is recommended, in which case, imitating nature, diabetic patients should be treated by introduction of the natural pancreatic juice into the duodenum.

**Aluminum Hydroxide in Treatment of Peptic Ulcer.**—Einsel and his associates observed that in the treatment of ulcer with aluminum hydroxide a large proportion of patients became symptom free in from two to seven days, even if they had had a recurrence lasting for several months. The 110 patients were treated from one month or less to three years. There were nine patients in whom symptoms remained or who had recurrences. The failures were due to the fact that the patients would follow no diet because of not having the food or because they would not cooperate. The patients were put on a modified Sippy convalescent diet, consisting of six feedings a day, followed by from 1 to 3 drachms (4 to 12 cc.) of gelatinous aluminum hydroxide from half an hour to one hour

after the ingestion of food. Constipation was controlled by agar and liquid petrolatum. Phenolphthalein was added when necessary. The patients after the first two or three weeks were allowed to work if the work was not too strenuous. They were cooperative because they did not have so many things to do in following the directions of the treatment. The free acidity of the stomach is lowered after treatment with aluminum hydroxide but returns to the initial level after the medication is discontinued. Although aluminum hydroxide serves obviously as a gastric antacid, it is possible that its efficacy in the treatment of peptic ulcer may be dependent in part at least on its slight astringent and demulcent properties and the fact that it appears to increase the secretion of mucin. No contraindications for aluminum hydroxide therapy have been observed. Determinations of the total base, chloride, carbon dioxide content and $p_H$ of the blood failed to disclose any disturbance in the acid-base balance that could be ascribed to this therapy.

## American Journal of Diseases of Children, Chicago

**48:** 481-712 (Sept.) 1934

*Human Convalescent Serum in Treatment of Preparalytic Poliomyelitis: Comparison of Four Hundred and Forty-Seven Treated and One Hundred and Two Control Patients in New York City in 1931. A. E. Fischer, New York.—p. 481.
Contour of Chest in Children: I. According to Age. S. A. Weisman, Minneapolis.—p. 502.
Fate of Children of Tuberculous Families, Including Those Treated and Those Not Treated with B C G. Camille Kereszturi, W. H. Park, P. Vogel and M. Levine, New York.—p. 507.
*Cerebral Injury in the New-Born: Its Relation to Constitution and Tetany Syndrome. W. R. Shannon, St. Paul.—p. 517.
Glossoptosis Due to Atresia and Hypotrophy of Mandible. P. Robin, Paris, France.—p. 541.
Acetarsone in Treatment of Osseous Lesions of Early Congenital Syphilis. C. F. Friedman, Brooklyn.—p. 548.
Anatomy and Physiology of Gallbladder in Children: Cholecystographic Study. E. A. Boyden and Alice H. Fuller, Minneapolis.—p. 565.

**Convalescent Serum in Treatment of Poliomyelitis.**—In determining the value of convalescent serum in preparalytic poliomyelitis, Fischer observed that the outcome for the treated patients was no better than that for the untreated ones, if as good; while the controls were probably somewhat milder, he feels that no advantage was shown by the other group of 579 patients with poliomyelitis seen early in the course of the disease, of whom 477 were treated by injection of convalescent serum. A sufficient number of control cases should be obtained, as the author's present study has demonstrated that there is no proof that a physician is depriving his patient of an equal chance for complete recovery by not administering convalescent serum. Lacking a substitute therapeutic procedure, it would seem fair in subsequent epidemics to retest the value of potent serum in the preparalytic or meningitic stage of poliomyelitis, using, if possible, exactly parallel or alternate cases for control.

**Cerebral Injury in the New-Born.**—Shannon states that the syndrome consisting of tetany, generalized edema and edema of the brain in the new-born infant occurs as a result of some interference with the calcium metabolism which results in a lowered ionic calcium content of the blood and tissues. The possible causes of this deficiency in ionic calcium are the same as those that might be responsible at any age—excess of sodium or potassium, calcium starvation, parathyroid deficiency and alkalosis—and they may and probably do work in combination in bringing on the symptoms. Since the syndrome is constitutional, it follows that the symptoms commonly attributed to cerebral injury and to atelectasis may be of constitutional origin. Therefore the problems of cerebral involvement and of atelectasis and related conditions must be viewed from a more comprehensive angle than merely from that of the obstetric procedure, a factor that in the long run is probably less important than the other elements. Calcium therapy is specific for the syndrome. This is as true for the serious symptoms of cerebral edema as for the less serious ones of tetany and generalized edema. Since the symptoms of cerebral edema from calcium deficiency are indistinguishable from those commonly attributed to cerebral injury from other causes and are often indistinguishable from those usually credited to atelectasis, it follows logically that the hypothesis offers an extremely valuable additional method of therapeutic approach in such cases.

## Am. J. Roentgenol. & Rad. Therapy, Springfield, Ill.

**32:** 293-436 (Sept.) 1934

Roentgen Treatment of Cervical Adenitis: Review of Three Hundred and Thirty-Three Consecutive Cases. G. E. Pfahler and P. J. Kapo, Philadelphia.—p. 293.
Observations on Encephalography. C. Howard, New York.—p. 301.
Encephalography. K. Kornblum and F. C. Grant, Philadelphia.—p. 311.
Comparison of Roentgen-Ray Densities with Pulmonary Pathology. K. Dunham, Cincinnati.—p. 317.
*Giant Excavation and Emphysematous Bulla Mistaken for Pneumothorax: Report of Two Cases. A. A. Karan and W. Haymaker, Wallum Lake, R. I.—p. 322.
Roentgen Study of Chest in Two Hundred Patients with Goiter. S. J. Hawley, Danville, Pa.—p. 326.
Superior Value of Expiratory Roentgenogram in Diagnosis of Incomplete Pneumothorax. S. Greenberg, Ray Brook, N. Y.—p. 330.
Symphysis Pubis in the Female. J. M. Barnes, Buffalo.—p. 333.
*Atypical Perthes' Disease: Case. E. Freund, Iowa City.—p. 353.
Demonstration of Renal Lymphatic Vessels. H. A. Jarre, Detroit.—p. 358.
Dangers of Roentgenoscopy and Methods of Protection Against Them: I. General Review of Problem. E. T. Leddy, E. L. L. Cilley and B. R. Kirklin, Rochester, Minn.—p. 360.
Roentgen-Ray Diffraction Studies of Enamel and Dentin. W. F. Bale, H. C. Hodge and S. L. Warren, Rochester, N. Y.—p. 369.
Studies on Effect of Roentgen Rays on Lymphomatosis of Mice. J. Furth, with assistance of B. Peterson, New York.—p. 377.
Simple Method of Photometering Photographic Spectrums. A. Mutscheller, New York.—p. 384.

**Giant Excavation and Emphysematous Bulla Mistaken for Pneumothorax.**—Karan and Haymaker report two cases in which a mistaken diagnosis of pneumothorax was made: one a case of tuberculous vomica occupying almost an entire lung, the other a case of an immense emphysematous bulla. In both instances necropsy was performed. In the first case physical examination was of little aid in arriving at a correct diagnosis. It tended to confirm the presence of pneumothorax suggested by the roentgenogram. Iodized poppy-seed oil instillation might have been of value, for it would have shown the defects in the bronchial tree and would have collected entirely on the floor of the excavation. On the other hand, if the pathologic picture had been that of a tuberculous pneumothorax with bronchopleural fistula, the iodized oil would have passed through the fistula and settled on the floor of the pneumothorax cavity. The patient was too ill for bronchoscopic examination. Aspiration would have been of value if the condition had been that of closed pneumothorax. However, it could not have differentiated a giant cavity from a pneumothorax with bronchopleural fistula. The patient had no hemoptysis or even blood-tinged sputum throughout the course of the disease. In the second case, bronchoscopy with iodized poppy-seed oil instillation would have been of diagnostic value for the reason that a bronchial tree could have been demonstrated within the wall of the emphysematous sac. A view of the roentgenogram in retrospect does cast some doubt on the diagnosis, because there is no distinct demarcation between the area of decreased density and the pulmonary tissue. If the diagnosis had been doubted, roentgenograms taken in lateral and oblique positions might have been of diagnostic value. Bronchoscopy and instillation of the iodized oil should be used as a routine measure in doubtful cases of pneumothorax.

**Atypical Perthes' Disease.**—Freund presents a case of atypical Perthes' disease in which a distinct line of fracture in the subchondral zone was visible in the first roentgen studies of the hip joint. The patient was decisive about his trauma. The mechanism of the trauma is not clear but the author believes that a compression fracture occurred bringing about an aseptic necrosis of the bone. Not the entire femoral epiphysis was involved as is usually true in a definite case of Perthes' disease. Only the central portion of the epiphysis that lies just below the outer edge of the acetabulum was affected by aseptic necrosis. The compression fracture of the central portion of the epiphysis led to a decrease of the central portion of the head and a slight increase of the roentgen shadow. The roentgenologic changes of the hip joint (especially of the femoral head) are not pathologic by themselves, they are rather an expression of a reorganization; i. e., a healing process going on in the necrotic areas and sustained by the healthy tissue. The central portion, which was not yet invaded by the reorganizing fibrous bone marrow, assumed

more and more the wedge-shaped appearance of the sequestrum. An increased shadow, cast by the central portion, was due to the comparatively atrophic nature of the surrounding parts together with a filling out or plugging up of the marrow spaces by small bone fragments and bone detritus, which arose at the site of fracture. The fracture line itself disappeared rather early. This should not be interpreted as a complete healing of the fracture, because it is impossible for bony callus to be produced in the necrotic zone. Roentgenologically, the joint cartilage seemed as in the cases of Perthes' disease—uninvolved. The earlier roentgenograms showed even a widening of the joint space as compared with that of the normal side. The joint space itself showed more pronounced changes than are seen in the average case of Perthes' disease. The swelling of the hip region, the tenderness, the marked limitation of motion and the increase of temperature pointed to an infectious process, and drainage was considered. Two tuberculin tests were negative. In the early roentgenograms no changes in the epiphyseal plates or in the juxta-epiphyseal portion of the neck could be seen. There were no signs of a circumscribed or a diffuse osteoporosis. Later it did seem that the apex of the wedge-shaped area crossed the epiphyseal plate and reached the juxta-epiphyseal portion of the neck. This portion became resorbed quickly, but there followed disintegration of the epiphyseal plate between the head and neck and also of the epiphyseal plate of the greater trochanter. The disintegration of these plates led to a shortening of the limb of more than 1½ inches. The osteoporosis alone suggested to the author that he was not dealing with a necrotic bone area undergoing dissection but rather with one that was previously necrotic and subsequently replaced by new bone tissue. For some reason, it has not yet become homogeneously fused with the surrounding cancellous bone.

## American Review of Tuberculosis, New York

**30:** 375-518 (Oct.) 1934

Relations Between Extrapulmonary and Pulmonary Tuberculosis. D. Reisner, New York.—p. 375.
Management of Adhesions in Artificial Pneumothorax: Clinical Analysis of Two Hundred Consecutive Cases with Description of Technic and New Instruments. J. W. Cutler, Philadelphia.—p. 416.
*Intra-Abdominal Pressure and Its Regulation. D. Salkin, Howell, Mich.—p. 436.
Pulmonary Tuberculosis in Infancy, Childhood and Adolescence. J. P. Nalbant, Northville, Mich.—p. 458.
Preparation of Seibert's Tuberculin Protein (T. P. T.) for Diagnostic Purposes. L. T. Clark, A. D. Emmett and O. D. Bird, Detroit.—p. 471.
Comparative Testing with Seibert's Tuberculin Protein (T. P. T.): Note. J. M. Appel, B. H. Douglas, Detroit; Teckla Rosenbusch and H. S. Willis, Northville, Mich.—p. 478.
*Comparison of Old Tuberculin with Tuberculin Protein T. P. T. J. B. Barnwell and H. M. Pollard, Ann Arbor, Mich.—p. 482.
Blood Glutathione in Tuberculosis. R. N. Loomis and E. Bogen, Olive View, Calif.—p. 505.
New Medium for Rapid Cultivation of Tubercle Bacilli. A. Guernon, St. Agathe, Que.—p. 510.
Importance of Social Diagnosis in Treatment of Tuberculous. Beulah Burhoe.—p. 514.

**Regulation of Intra-Abdominal Pressure.**—Salkin points out that there exists in the abdominal wall a process of adaptability which attempts to change intra-abdominal pressure. This process may be called "abdominal accommodation" and is of a high degree of efficiency. Abdominal accommodation is dependent on an intact neuromuscular system and may be regarded as a reflex mechanism in the conservation of the activity of the body. This mechanism has a direct clinical bearing on intraperitoneal procedures and the functional coordination of pleural and peritoneal cavities. Such factors as posture, intra-abdominal fossae and visceral displacement are of secondary and negligible importance in accommodation. The muscle contributes its elasticity and the nervous system makes possible the activity and the changes in the tone of the process. Combined, they produce an adaptability of the abdomen to adjust itself to any condition that may change its optimal pressure.

**Comparison of Old Tuberculin with Tuberculin Protein.**—Barnwell and Pollard state that Seibert's tuberculin protein (T. P. T.) can be incorporated in dry powder in minute amounts (0.001 mg.) in tablets of dry lactose, with an accuracy comparable to that obtained by the dilution of old tuberculin by quantitative chemical methods. The lactose alone produces no reaction in tuberculous patients. Among those reacting to either T. P. T. or old tuberculin, the proportion of severe and mild reactions is about the same when roughly comparable protein doses are used. Seibert's tuberculin protein, 0.0001 mg., is equivalent in potency to 0.1 cc. of 1:10,000 old tuberculin in terms of percentage reactions among students. Every student reacting to 0.0001 mg. of T. P. T. reacted to old tuberculin in some dilution up to 1:100. Every patient with proved tuberculosis (about 100), including skin tuberculosis, reacted to some dose of T. P. T. up to 1 mg. As the doses of old tuberculin and T. P. T. are increased in multiples of 10, many more students react to T. P. T. than to old tuberculin. Twelve persons who reacted to T. P. T. and not to old tuberculin presented evidence of previous tuberculous infection in the roentgenograms. One with such evidence gave a reaction to old tuberculin but not to T. P. T., and seven were negative to both tuberculins (T. P. T. 0.01 mg. and old tuberculin 1:100). The authors present evidence to show that sensitization does not account for the differences in the number of reactions between old tuberculin and T. P. T. They suggest that the comparison of the proportion of reactors in simultaneous tests on apparently healthy persons is a delicate method of standardization of an unknown against a known tuberculin. Seibert's tuberculin protein in the doses used suggests that tuberculization in the authors' community is at a higher level than that indicated by old tuberculin 1:100.

## Anatomical Record, Philadelphia

**60:** 125-250 (Sept. 25) 1934

Studies on Physiology of Reproduction in Sheep: I. Ovulation Rate of the Ewe as Affected by Plane of Nutrition. R. T. Clark, Minneapolis.—p. 125.
Id.: II. Cleavage Stages of Ovum. R. T. Clark, Minneapolis.—p. 135.
Studies of Reaction Between Methylene Blue and Living Cells and Tissues in Transparent Moat Chamber Introduced into Rabbit's Ear. R. G. Abell, Philadelphia.—p. 161.
Microscopic Observations of Structural Changes in Adrenal Gland of Living Frog Under Experimental Conditions. E. Singer and R. L. Zwemer, New York.—p. 183.
Origin of Deep and Circumflex Femoral Group of Arteries. G. D. Williams, C. H. Martin and L. R. McIntire, St. Louis.—p. 189.
Distribution and Drainage of Omental Lymphatics in Dog and Cat. P. H. Simer, Chicago.—p. 197.
Cellular Cycle, Golgi Apparatus and Phenomenon of Reversal in Human Thyroid Parenchyma. J. Gillman, Johannesburg, South Africa.—p. 209.
The Os Priapi: Study in Bone Development. E. B. Ruth, Rochester, N. Y.—p. 231.

## Annals of Internal Medicine, Lancaster, Pa.

**8:** 243-382 (Sept.) 1934

Pulmonary Tuberculosis as Part of Systemic Infection (Hematogenous Pulmonary Tuberculosis). J. A. Miller, New York.—p. 243.
Blood Sedimentation Test: Its Use as Routine, Especially in Pulmonary Tuberculosis. P. H. Ringer and Mary Roach, Asheville, N. C.—p. 258.
Surgical Treatment of Pulmonary Tuberculosis. R. C. Matson, Portland, Ore.—p. 268.
*Observations on Diagnosis and Treatment of Peripheral Vascular Disease. E. M. Landis, Philadelphia.—p. 282.
Etiology of Arterial Hypertension. Soma Weiss, Boston.—p. 296.
Influential Factors in Recovery from Rheumatoid Arthritis. R. L. Cecil, New York.—p. 315.
Cardiovascular Observations in Two Hundred and Fifteen Neurosyphilitics. C. T. Burnett and C. A. Rymer, Denver.—p. 327.
Abdominal Pain: Its Significance and Diagnostic Value. T. R. Brown, Baltimore.—p. 343.
Factors Influencing Operative Mortality in Exophthalmic Goiter. W. O. Thompson, S. G. Taylor 3d and K. A. Meyer, Chicago.—p. 350.
Alternative to Revolution. G. Frank, Madison, Wis.—p. 360.

**Peripheral Vascular Disease.**—Landis maintains that in peripheral vascular disease, if the surface temperature fails to reach the normal level in a room at suitable temperature it can be concluded that the arteries supplying the part are unable to dilate owing to organic changes in their walls. The author induces vasodilatation of the peripheral vessels by immersing two extremities in warm water, verifying abnormal observations in most instances by anesthetizing the posterior tibial nerve. Patients with coldness, blueness or pain in the lower extremities who under suitable conditions show a normal elevation of skin temperature, 31.5 C. (88.7 F.) or more, are free from significant organic arterial obstruction. When the temperature of the skin fails to reach 31.5 C. but reaches 26 C.

(78.8 F.) or more, only a moderate grade of organic occlusion is present. In such patients benefit can be expected from contrast baths, local heat, diathermy, vasodilator drugs, the warm cradle or sympathetic ganglionectomy, all of which increase blood flow by dilating those vessels which are still capable of expansion. In the presence of rigid arteries incapable of dilatation, the total fall in pressure in the peripheral vascular system may be increased by elevating systemic blood pressure or by diminishing venous pressure. The author employed alternate periods of suction and pressure in sixteen patients with advanced peripheral vascular disease with the aid of an aluminum box large enough to accommodate the lower extremity to a point 6 inches above the knee where the thigh was surrounded by an air-tight rubber cuff. An air pump, valve, mercury manometer and relay were so arranged that the lower extremity was exposed alternately and automatically to a negative pressure of from 80 to 120 mm. of mercury for twenty-five seconds and a positive pressure of from 60 to 80 mm. of mercury for five seconds. In each instance the disease was of long standing; the patients suffered from thrombo-angiitis obliterans, simple arteriosclerosis or diabetes with arteriosclerosis. Eventually amputation was performed in all four patients with frank gangrene. Patients with indolent or slowly enlarging ulcers, but without frank gangrene, large sloughs or extending necrosis, often obtained striking relief from rest pain. Sleep ordinarily became possible without sedatives after a few days. The results in patients with intermittent claudication have been less striking, though in general slow improvement was observed. Alternate suction and pressure increase blood flow temporarily, even after organic vascular disease has diminished or abolished vasodilatation. Contraindications to the use of suction and pressure can be given. Active or acute infection may be influenced unfavorably by the procedure. Osteomyelitis, however slight, makes it unlikely that complete healing of cutaneous lesions can be obtained as long as drainage from beneath continues. When large masses of tissue are actually gangrenous or sloughing, only temporary relief has been observed so far.

## Archives of Internal Medicine, Chicago

**54:** 315-482 (Sept.) 1934

Hyperparathyroidism Due to Diffuse Hyperplasia of all Parathyroid Glands Rather Than Adenoma of One: Clinical Studies on Three Such Cases. F. Albright, Esther Bloomberg, B. Castleman and E. D. Churchill, Boston.—p. 315.
*Hypoglycemia in Diabetes Associated with Obstruction of Pancreatic Duct. Isolde T. Zeckwer, Philadelphia.—p. 330.
Interatrial Septal Defect. H. Roesler, Philadelphia.—p. 339.
Effect of Toxemia on Tolerance for Dextrose and on Action of Insulin: II. J. Shirley Sweeney, N. Barshop, L. C. LoBello and R. S. Rosenthal, Dallas, Texas.—p. 381.
Significance of Inorganic Sulphate Clearance in Renal Disease. J. W. Macy, Rochester, Minn.—p. 389.
Cholesterol and Vitamin A Content of Liver in Man: Study of One Hundred and Six Livers Obtained at Autopsy. Gulli Lindh Muller and M. M. Suzman, Boston.—p. 405.
*Essential Fructosuria: Report of Three Cases with Metabolic Studies. S. Silver and Miriam Reiner, New York.—p. 412.
Effect of Thyroxine and Antithyroid Substances on Serum Lipase. M. H. Hoffmann, St. Paul.—p. 427.
Thrombo-Angiitis Obliterans: IX. Cause of Death. S. H. Averbuck and S. Silbert, New York.—p. 436.
Infection and Tolerance for Dextrose. E. G. Schmidt, J. S. Eastland and J. H. Burns, Baltimore.—p. 466.

**Hypoglycemia in Diabetes and Obstruction of Pancreatic Duct.**—Zeckwer discusses an unusual case of hypoglycemia. The patient had a history of diabetes but had been unwilling to cooperate and had not received insulin. He came to the hospital moribund and in a state of hypoglycemia. He had been eating little for a week before admission. Intravenous administrations of dextrose promptly brought him out of coma and mental confusion, but he relapsed several times into hypoglycemic shock. Necropsy revealed that pancreatic calculi and calcification had caused almost complete atrophy of the acinar and island cells of the pancreas. This amazing atrophy is the closest possible clinical parallel to experimental pancreatectomy in dogs. No pancreatic juice was available to this patient. The liver showed degenerative changes microscopically. The factor of undernutrition must be considered in the production of the hypoglycemia in this case but has less experimental basis than the effect of loss of external pancreatic secretions. In 10,300 necropsies, only four other instances of pancreatic calculi could be found, none of which were associated with diabetes. The author suggests that when the liver is damaged through loss of the external secretions of the pancreas, especially if the condition is aggravated by undernutrition and tuberculosis, hypoglycemia may result in diabetes even in the absence of treatment with insulin.

**Essential Fructosuria.**—Silver and Reiner report three cases with metabolic studies of two and state that essential alimentary fructosuria is a specific, probably inborn, error of metabolism, characterized by the inability of the organism to utilize fructose normally and manifested clinically by a symptomless excretion of fructose. Fructose is passed in the urine only if fructose or substances capable of yielding it on digestion are ingested. All the reducing substances disappear from the urine if these foods are removed from the diet. The usual sources of fructose are cane sugar, honey and fruit. This disorder is not inconsistent with longevity and there is no reason to believe that it is a precursor of a diabetic state. Transition from fructosuria to glycosuria has never been observed. The tolerance and metabolism of all the other known carbohydrates are normal in this condition. Dextrose, taken orally by the patient whom the authors studied, gave only the expected rise in blood sugar and caused no glycosuria, and the hyperglycemia reached the fasting level by the fourth hour. Galactose was tolerated in a normal dose of 40 Gm. The relative insignificance of insulin and epinephrine in the metabolism of fructose compared with dextrose is pointed out and the possible intermediary metabolism of sorbitol is discussed.

## Archives of Neurology and Psychiatry, Chicago

**32:** 465-680 (Sept.) 1934

Olfactory Imagination and Olfactory Hallucinations: Experimental and Clinical Study of Sense of Smell in Normal and in Psychotic Persons. W. Bromberg and P. Schilder, New York.—p. 467.
Spinal Concussion: Histologic Study of Two Cases. R. S. Baldwin, Chicago.—p. 493.
*Chronic Manganese Poisoning: Report of Case, with Autopsy. Myrtelle M. Canavan, S. Cobb and C. K. Drinker, Boston.—p. 501.
New Method of Preserving Normal and Pathologic Brain Tissue. J. Rosett, New York.—p. 513.
*Atopy as Cause of Epilepsy. J. Forman, Columbus, Ohio.—p. 517.
Cerebrospinal Hydrodynamics: IV. Clinical Experimental Studies. J. H. Masserman, Baltimore.—p. 523.
*Phytotoxic Index: I. Results of Studies with Sixty-Eight Male Schizophrenic Patients. W. Freeman and J. M. Looney, with technical assistance of Rose R. Small, Worcester, Mass.—p. 554.

**Chronic Manganese Poisoning.**—Canavan and her associates report the case of a man, aged 69, with manganese poisoning, evidenced by stiffness in the legs and gait, frequent falls, fatigability and sleepiness, who died of cardiorenal disease fourteen years after the onset of the symptoms due to the occupational hazard. The brain showed atrophy over the vertex and lateral aspects but not at its base. This atrophy was somewhat more pronounced than that usually present at that age. On frontal section the atrophy was conspicuous, and there was dilatation of the lateral ventricles with marked shrinking of the basal ganglions. Microscopic examination showed some diffuse cellular changes in the cerebral cortex and cerebellum, but the significant pathologic process was found in the basal ganglions, in which degeneration of nerve cells, satellitosis and gliosis were found. There was little difference of intensity in the process between the caudate nucleus, the putamen, the globus pallidus and the thalamus; in amount of gliosis, the optic thalamus led slightly, but marked focal scars were seen in the caudate nucleus and in the globus pallidus. The effect of the cellular damage noted in small sections was strikingly shown by the large total sections of the brain stained by the Weigert myelin sheath method. In those sections the shrinkage of the basal ganglions was measurable, distorting the anatomic outlines.

**Atopy as Cause of Epilepsy.**—Forman discusses five cases of epilepsy, which heretofore have been indistinguishable from other cases of essential or idiopathic epilepsy, occurring in persons with an inherited tendency to specific, abnormal reactions to certain inhalants, contactants and foodstuffs; that is, atopy. Since almost every other possible theory has been evoked to explain epilepsy, it is to be expected that the seizures would suggest a hypersensitiveness. Enough evidence has been brought forward to show that atopic phenomena are present in

a small proportion of epilepsy cases. Atopy can be only one of many causes of epilepsy. The essential criteria for the recognition of atopy are: (1) a familial and (2) a personal history of asthma, hay fever, vasomotor rhinitis, hives, eczema, migraine-like headaches and other allied conditions, (3) eosinophilia in the blood preceding and during the attacks and (4) positive reactions to cutaneous tests for sensitiveness to protein. If a family history of atopic manifestations or a personal history revealing other atopic reactions in the patient himself is not obtained, the patient is returned to the neurologist. But if such a history is obtained, the remaining criteria of eosinophilia and positive cutaneous reactions are sought. With these rigid requirements one may eliminate the instances (at least 25 per cent) of atopic persons whose family histories are negative for allergic manifestations and of patients who do not give positive cutaneous reactions. Later, when the thesis of this paper has been established, the allergist may assume the less rigid requirements demanded for pollen hay fever. Skin tests and clinical trial are the two methods of identifying the offending substances in atopy.

**Phytotoxic Index in Schizophrenic Patients.**—Freeman and Looney studied the inhibitory effects of 1 and 2 per cent solutions of defibrinated whole blood in a 50 per cent solution of nutrient Shive solutions on the growth of the roots of Lupinus albus seedlings. Male schizophrenic patients and normal male subjects, all free from any perceptible organic diseases, were used. A modification of Macht's original procedure was employed. No significant differences were found in the inhibitory action of whole blood in strengths of either 1 or 2 per cent between male schizophrenic patients and the normal male controls. Likewise no abnormal inhibitory action on the growth of these seedlings was demonstrable by using a 2 per cent solution of diluted urine. No inhibitory action was obtained with toluene in solutions four times as strong as that which had been used as a preservative. No existing correlation was found with the phytotoxic indexes of the solutions of blood or urine of the patients and their age, period of hospitalization or subtype of schizophrenia.

## Archives of Ophthalmology, Chicago

**12:** 473-634 (Oct.) 1934

Preliminary Report on Local Anesthesia of the Eye. C. Koller, Vienna, Austria.—p. 473.
Influence of Fixation on Visual Acuity. F. H. Adler and M. Fliegelman, Philadelphia.—p. 475.
Hemangio-Endothelioma of Orbit: Removal Through Transcranial Approach. A. W. Adson and W. L. Benedict, Rochester, Minn.—p. 484.
Repair and Restoration of the Eye Socket. G. B. O'Connor and G. W. Pierce, San Francisco.—p. 493.
Unilateral Central and Annular Scotoma Produced by Callus from Fracture Extending into Optic Canal: Report of Two Cases. W. I. Lillie, Philadelphia, and A. W. Adson, Rochester, Minn.—p. 500.
Alterations of Retina in Experimental Toxic Nephrosis. V. La Rocca, New York.—p. 509.
Conjunctivoglandular Syndrome of Parinaud: Report of Case Showing Thread Mold in Sections. S. R. Gifford and E. E. Dillon, Chicago.—p. 518.
Movements of Eyes Under Cover: Roentgenographic Study. F. H. Rodin and R. R. Newell, San Francisco.—p. 525.
Experimental Endophthalmitis Phaco-Anaphylactica in Rabbits. E. L. Burky, Baltimore.—p. 536.
*Ocular Lesions Resulting from Thallium Acetate Poisoning as Determined by Experimental Research. C. M. Swab, Omaha.—p. 547.
Foveal Projection During Ductions. R. H. Peckham, Philadelphia.—p. 562.
Essential (Progressive) Atrophy of Iris: Report of Case. A. S. Barr, Ann Arbor, Mich.—p. 567.
Some Factors Concerned in Correction of Aphakia. A. Cowan, Philadelphia.—p. 571.

**Ocular Lesions from Thallium Acetate Poisoning.**—The experiments of Swab indicate that thallium acetate is fatal to experimental animals when administered even in small doses. Rodents exhibited greater tolerance to the drug than dogs. Feeding experiments with rats failed to cause cataractous changes that could be detected even histologically. All experimental animals presented evidences of pathologic change in every part of the visual pathway, even including the cortex of the occipital lobe. The lens was the only structure of the eyeball that was not affected by the intoxication. Massive round cell infiltration was frequently encountered in the ciliary body as well as in the retrobulbar connective and muscle tissues.

## Archives of Otolaryngology, Chicago

**20:** 297-446 (Sept.) 1934

Malignant Disease of Larynx: Rare Types, Premalignant Conditions and Conditions Simulating Malignancy. J. E. MacKenty, edited by E. R. Faulkner, New York.—p. 297.
Plasmocytoma and Rhabdomyoma of Paranasal Sinuses: Pathologic and Surgical Considerations: Report of Cases. K. G. Cooper, Denver.—p. 329.
Mycotic Infections of Maxillary Sinuses. H. N. Stevenson, New Rochelle, N. Y.—p. 340.
Sphenoid Sinus: Postoperative Observations Following Operations on Ethmosphenoid Sinuses. F. T. Hill, Waterville, Maine.—p. 351.
Supraglottic Tumors: Methods of Treatment and Illustrative Cases. F. A. Figi, Rochester, Minn.—p. 361.
Adenoma of Bronchial Mucous Glands. B. M. Fried, New York.—p. 375.
Recurrent Basal Cell Carcinoma of Nasal Septum: Histogenesis of So-Called Cylindromas. E. A. Bredlau, Chicago.—p. 382.
Modification of Auditory Theory. H. Davis, A. J. Derbyshire and M. H. Lurie, Boston.—p. 390.
Acute and Chronic Otitis Media, Sinus Thrombosis and Petrosal Pyramid Suppuration. S. J. Kopetzky, New York.—p. 396.

## Archives of Pathology, Chicago

**18:** 295-458 (Sept.) 1934

Digital Vascular System, with Reference to State of Glomus in Inflammation, Arteriosclerotic Gangrene, Diabetic Gangrene, Thrombo-Angiitis Obliterans and Supernumerary Digits in Man. N. W. Popoff, Rochester, N. Y.—p. 295.
*Myocardial Changes in Hypertension. V. Levine, Chicago.—p. 331.
*Bilateral Glioblastoma Multiforme: Report of Two Cases. F. W. Taylor, Indianapolis.—p. 347.
Changes in Brain in Pernicious Anemia. Ruth Lebensart, Chicago.—p. 356.
Extensive Generalized Torulosis in Cheetah or Hunting Leopard (Cynaelurus Jubatus). F. D. Weidman and H. L. Ratcliffe, Philadelphia.—p. 362.
Influence of Drugs Used in Antisyphilitic Therapy on Reticulo-Endothelial System. Kathleen B. Muir and S. W. Becker, Chicago.—p. 370.

**Myocardial Changes in Hypertension.**—Levine made gross and microscopic examinations of twenty-seven hypertensive hearts. For the microscopic examination, blocks of tissue were taken from seven different locations in each heart. Six hearts were found to have marked sclerosis of the large coronary arteries and six had a marked sclerosis of the arterioles in one or more sections. Since one of the six with marked arteriolosclerosis also had marked sclerosis of the large coronary arteries, there were eleven hearts that had marked organic changes in the arterial tree. The remaining sixteen hearts had changes in the arterial tree that were considered too slight to have seriously interfered with the supply of blood. In all the hearts, minute myocardial scars were observed in many areas. The most marked scarring was present in the hearts with marked alteration of the wall of the arteries and arterioles, but many hearts without organic arterial changes had marked interstitial fibrosis. No correlation could be found between age, sex, race, weight of the heart, blood pressure, the cause of death or the presence of syphilis and the amount of myocardial fibrosis. Many of the scars in the myocardium were observed to contain varying amounts of elastic tissue. This confirms the contention of Perkins and Miller that stress and strain can convert collagenic connective tissue into elastic tissue. Endocardial sclerosis was present in all the hearts, being as a rule most marked in the left auricle. It was due usually to an increase in smooth muscle cells and elastic fibers. In the sixteen hearts without organic changes in the arterial tree the functional changes undoubtedly acted over a long period and in a mild degree, leading only to myocardial fibrosis.

**Bilateral Glioblastoma Multiforme.**—Taylor reports two cases of bilateral glioblastoma multiforme. In the first case, tumors of the left temporal and right parietal lobes were found joined by a filamentous strand of tumor tissue. This passed from one hemisphere to the other just posterior to the splenium of the corpus callosum. It was thought that the left temporal tumor was primary and produced a similar lesion in the right parietal cortex by direct extension into the opposite hemisphere. In the other case the tumor was believed to be a bilateral glioblastoma multiforme of the frontal lobe of multicentric origin. No communication or extensions could be demonstrated. The possibility of metastasis from one frontal lobe to the other could not be ruled out entirely, since the pia-arachnoid bounded a small portion of each growth. There was, however, no other suggestion of metastasis in the brain.

## Arch. of Physical Therapy, X-Ray, Radium, Chicago

**15:** 513-576 (Sept.) 1934

Cancer of Head and Neck: Critical Analysis of Available Therapeutic Methods. F. L. Lederer, Chicago.—p. 517.
Thermostatically Controlled Heating Hood in Vascular Diseases of Lower Extremities. W. Bierman, New York.—p. 530.
*Obliteration of Hemorrhoids with Negative Galvanism. W. E. Keesey, Chicago.—p. 533.
Effects of Hyperperistalsis on Electrocardiogram. I. H. Tumpeer, Chicago.—p. 541.
Physical Therapeutic Methods in Modern Dermatology (Exclusive of X-Rays and Radium). G. M. MacKee, New York.—p. 543.
Physical Therapy in Industrial Injuries. T. E. P. Gocher, San Francisco.—p. 547.
Galvanic Current in Atrophic Rhinitis. J. S. Stovin, New York.—p. 551.
Sodium Ricinoleate for Colonic Medication. C. A. Stimson, Lansing, Mich.—p. 553.
Submucous Coagulation of Hemorrhoids. N. Zehr, Fort Wayne, Ind.—p. 556.

**Obliteration of Hemorrhoids with Negative Galvanism.**—Keesey believes that 90 per cent of all hemorrhoids are amenable to negative galvanic treatment. Although surgical treatment is the only method for external hemorrhoids, all cases of internal and most cases of mixed hemorrhoids can be obliterated permanently and safely with negative galvanism. The superiority of negative galvanism for internal and mixed hemorrhoids is based on simplicity of technic, safety of procedure and permanence of cure. Equipment embraces a generator that provides a smooth galvanic current and needle electrodes susceptible of flexible manipulation. A needle guide-holder eliminates the need of assistance. The advantages of negative galvanism, he says, far outweigh its minor inconveniences, chief of which is the time involved for each of a series of successful applications.

## Delaware State Medical Journal, Wilmington

**6:** 199-220 (Sept.) 1934

Impairment of Hepatic Carbohydrate Function Estimated by Levulose and Galactose. R. W. Tomlinson, Wilmington.—p. 199.

## Johns Hopkins Hospital Bulletin, Baltimore

**55:** 171-244 (Sept.) 1934

Leukocyte Picture of Blood in Cases of Pulmonary Tuberculosis, with Especial Study of Filament-Nonfilament Count. W. O. Kelley, Trudeau, N. Y.—p. 171.
*Diabetes Mellitus and Hyperthyroidism: Report of Case. R. G. Hills, J. C. Sharpe and L. N. Gay, Baltimore.—p. 193.
Thayer Memorial Exercises Held in Hurd Memorial Amphitheater, Feb. 24, 1934. J. S. Ames, J. M. T. Finney, S. Flexner, introductory remarks by H. D. Harlan, Baltimore.—p. 201.
Glycogenetic Function of Liver in Experimental Hyperthyroidism. Mary V. Buell and Margaret B. Strauss, Baltimore.—p. 220.
Eosin-Methylene Blue Technic for Rapid Tissue Diagnosis. E. S. Stafford, Baltimore.—p. 229.
Treatment of So-Called Pseudo-Ménière's Disease. W. E. Dandy, Baltimore.—p. 232.
Effects on Hearing After Subtotal Section of Cochlear Branch of Auditory Nerve. W. E. Dandy, Baltimore.—p. 240.

**Diabetes Mellitus and Hyperthyroidism.**—Hills and his associates report a case that presented the symptoms of mild diabetes and mild hyperthyroidism. The patient had had diabetes during the three previous years. The hyperthyroidism had come on apparently two months before. Twenty-four hours after the patient knew that she was to be operated on, hyperglycemia and ketonuria developed in spite of precisely the same regimen that had controlled the diabetes during the eight preceding months. Extreme fear had apparently precipitated an exacerbation of the hyperthyroidism, and this in turn had caused a decrease of sugar tolerance. After six days of preoperative treatment, marked hyperglycemia persisted. A subtotal thyroidectomy was performed. Following the operation, sugar tolerance was markedly decreased, necessitating the daily administration of from 200 to 890 units of insulin. Compound solution of iodine given for four days was without benefit. Irradiating the pituitary was considered, but a roentgenogram showed that the sella turcica was smooth in outline and only slightly larger than normal. The onset of bronchopneumonia and a urinary tract infection produced a marked ketosis, which necessitated 890 units of insulin in twenty-four hours. The intravenous injection of sodium bicarbonate brought about a subsidence of the acidosis. The sugar tolerance increased rapidly following the resolution of the pneumonia. However, vascular collapse and repeated insulin shocks were followed by cerebral thrombosis with hemiplegia and aphasia. After this, the patient improved gradually. Contrary to the experience of John, Joslin and Lahey, who point out that thyroidectomy lowers total metabolism and consequently improves the carbohydrate tolerance, the patient showed no improvement. She was refractory to insulin before the removal of her thyroid, but not until after the emotional disturbance precipitated by her decision to undergo thyroidectomy. When she left the hospital, twice as much insulin was required to control the diabetes as had been necessary before the thyroidectomy. The cause of the ineffectiveness of insulin was not determined.

## Journal of Allergy, St. Louis

**5:** 541-642 (Sept.) 1934

*Treatment of Hay Fever and Asthma with Viosterol of High Potency. B. Z. Rappaport, C. I. Reed, Milicent L. Hathaway and H. C. Struck, Chicago.—p. 541.
Experiments in Silk Hypersensitivity and Inhalation of Allergen in Atopic Dermatitis (Neurodermatitis Disseminatus). Marion B. Sulzberger, New York, and W. T. Vaughan, Richmond, Va.—p. 554.
Studies on Pollen and Pollen Extracts: XIII. Dextrose Pollen Extracts: Therapeutic Results in 1933. L. Unger and Marjorie B. Moore, Chicago.—p. 561.
Experimental Study of Etiology of Dermatitis Venenata. H. W. Straus, Brooklyn.—p. 568.
Percentage of Persons Susceptible to Poison Ivy and Poison Oak. W. C. Spain, J. M. Newell and Miriam G. Meeker, New York.—p. 571.
Experimental Nickel Dermatitis. S. G. Stewart and F. E. Cormia, Philadelphia.—p. 575.
*Sedimentation Rate in Hay Fever: Before and During Seasonal Exacerbation. H. H. Gelfand and G. Victor, New York.—p. 583.
Perennial Hay Fever from Lycopodium: Case Report. G. L. Lambright and R. P. Albaugh, Cleveland.—p. 590.
Early, Active, Virus Immunity, with Particular Reference to Vaccinia in New-Born Infants. H. H. Donnally and Margaret M. Nicholson, Washington, D. C.—p. 592.
Food Allergens: III. Leukopenic Index: Preliminary Report. W. T. Vaughan, Richmond, Va.—p. 601.
Report on Insulin Sensitivity with Attempt at Passive Transfer. J. A. Murphy, J. T. Beardwood and Merle M. Miller, Philadelphia.—p. 606.
Inheritance of Allergy. C. S. Bucher, Champaign, Ill., and C. E. Keeler, Boston.—p. 611.

**Viosterol for Hay Fever and Asthma.**—Rappaport and his collaborators observed 212 patients suffering from seasonal hay fever and asthma. Of these, sixty-eight were treated with viosterol 10,000 X and 144 were treated with viosterol and pollen injections. Of the first group, 82.4 per cent experienced definite relief; 96.5 per cent of the second group had comparable degrees of relief. The combined treatment of viosterol and pollen injections is more effective than either one alone. The nature of the protective action of viosterol is as yet undetermined. It does not seem to be related to the calcium mobilizing power of viosterol. The optimal dose of 10,000 X viosterol along with pollen injection for pollen sensitivity is between 2 and 10 drops (0.12 and 0.66 cc.) daily, varying with the susceptibility of the patient rather than with the severity of the symptoms.

**Sedimentation Rate in Hay Fever.**—The study of Gelfand and Victor of sixty-three hay fever subjects revealed that only one showed a slow sedimentation rate. Of forty-two hay fever subjects observed before and during the season there were twenty-nine with normal rates. These had no disease complication whatever, in contradiction to the observations by Schulhof, who expressed the belief that a normal sedimentation rate in allergic persons is indicative of the presence of a more or less serious pathologic complication. There were twelve patients showing increased sedimentation rates, five of whom presented serious disease complications. The remainder had physiologic complicating conditions, such as pregnancy or menstruation. Only two of the sixty-one hay fever subjects investigated gave a slow sedimentation rate. The results of the authors' study seem to agree with those of Westcott and Spain in finding that a normal sedimentation rate is the rule in hay fever. The authors state that the rate remains normal during the hay fever season and that treatment with pollen extracts produces no effect. Therefore they belive that the sedimentation rate is of no diagnostic value in hay fever subjects and cannot be used as a test, for instance, to determine alteration, either a rise or fall, of the immunologic state of the hay fever patient.

## Journal of Experimental Medicine, New York

**60:** 269-402 (Sept. 1) 1934

Fate of Avirulent Hemolytic Streptococci Injected into Skin of Normal and Sensitized Rabbits: Local Fixation of Bacteria. D. M. Angevine, New York.—p. 269.

Maternal Transmission of Vaccinal Immunity in Swine: II. Duration of Active Immunity in Sow and of Passive Immunity in the Young. J. B. Nelson, Princeton, N. J.—p. 287.

Factor from Normal Tissues Inhibiting Tumor Growth. J. B. Murphy and E. Sturm, New York.—p. 293.

Effect of Growth-Retarding Factor from Normal Tissues on Spontaneous Cancer of Mice. J. B. Murphy and E. Sturm, New York.—p. 305.

Survival of Varieties of Typhus Virus in Mouse Passage, Particular Reference to Virus of Brill's Disease. S. R. Savoor and R. Velasco, Boston.—p. 317.

Effect of Antecedent Infection and Immunization with Streptococci on Reactivity of Rabbits to Horse Serum. M. P. Schultz and H. F. Swift, New York.—p. 323.

Influence of Sexual Maturity on Reactivity of Rabbits to Horse Serum. M. P. Schultz, New York.—p. 339.

Studies on Organogenesis: I. Ability of Isolated Blood Cells to Form Organized Vessels in Vitro. R. C. Parker, New York.—p. 351.

Properties of Causative Agent of Chicken Tumor: IX. Effect of Aqueous Extracts of Chicken Tumor I on Yeast Nucleic Acid. D. A. MacFadyen, New York.—p. 361.

Studies on Etiology of Spontaneous Conjunctival Folliculosis of Rabbits: II. Bacteriologic Investigations. P. K. Olitsky, J. T. Syverton and J. R. Tyler, New York.—p 375.

Bacteriologic Studies on Epizootic of Intestinal Disease in Suckling and Newly Weaned Mice. J. T. Syverton and P. K. Olitsky, New York.—p. 385.

Metabolism of Copper and Iron in Splenectomized Rats Free from Bartonella Muris Infection. Marta Sandberg and D. Perla, New York.—p. 395.

## Journal of Infectious Diseases, Chicago

**55:** 123-242 (Sept.-Oct.) 1934

Attenuation and Toxin Production of Diphtheria Bacillus: IV. Infusion-Free Peptone Mediums: V. Synthetic Mediums. A. Wadsworth and Mary W. Wheeler, Albany, N. Y.—p. 123.

Certain Properties of Virus of Equine Encephalomyelitis. Beatrice F. Howitt, San Francisco.—p. 138.

Biologic Classification of Bacillus of Rhinoscleroma. M. C. Morris and L. A. Julianelle, St. Louis.—p. 150.

Psittacosis Among Personnel of Hygienic Laboratory. G. W. McCoy, Washington, D. C.—p. 156.

Iso-Antigenic Properties of Casein. J. H. Lewis, Chicago.—p. 168.

*Ingestion of Staphylococcus Exotoxin by Human Volunteers, with Especial Reference to Staphylococcic Food Poisoning. C. E. Dolman, Toronto.—p. 172.

Institutional and Occupational Undulant Fever in Colorado. I. C. Hall and R. Learmonth, Denver.—p. 184.

*Use of Bacteriophage in Diagnosis of Bacillary Dysentery. R. F. Feemster, Boston.—p. 190.

Selective Action of Dyes and of Other Disinfectants on Bacteriophages. A. Y. Wells and N. P. Sherwood, Lawrence, Kan.—p. 195.

Examination of Children with Infection of Upper Respiratory Tract for Bacillus Pertussis by Cough Droplet Method. Harriet Leslie Wilcox, New York.—p. 199.

Effect of Deamination on Antigenic Properties of Casein. J. H. Lewis, Chicago.—p. 203.

Dissimilation of Sucrose by Shigella Paradysenteriae Variety Sonnei. H. Reynolds, C. S. McCleskey and C. H. Werkman, Ames, Iowa.—p. 207.

Antigenic Relation of Gravis Strains of Diphtheria Bacilli as Compared with Park 8 Strain. S. Etris, Philadelphia.—p. 220.

Outbreak of Food Poisoning Apparently Caused by New Serologic Type of Salmonella (S. Panama). E. O. Jordan, Chicago.—p. 224.

Differentiation of Streptococcus Epidemicus. I. Pilot, Chicago.—p. 228.

Studies on Herd Infected with Brucella Abortus: II. Incidence of Milk Contamination in Vaccinated Herd. Dorothy W. Caldwell, N. J. Parker and E. M. Medlar, Mount McGregor, N. Y.—p. 235.

**Ingestion of Staphylococcus Exotoxin.**—Dolman obtained bacteria-free filtrates containing staphylococcus exotoxin of specific pathogenic and antigenic properties from about 200 strains of staphylococci. Forty-two volunteers drank staphylococcus filtrates with impunity on 110 occasions, most of the filtrates containing highly potent exotoxin. One strain yielded a filtrate of which 2 cc. caused severe gastro-intestinal disturbance in three of nine volunteers and a lesser degree of disturbance in four others. Although under certain conditions a staphylococcus metabolite is produced which causes symptoms of gastro-enteritis in human beings, only occasional strains are able to produce this substance, the identity of which is distinct from the exotoxin. The actual incidence of staphylococcus food poisoning is therefore not likely to be high.

**Bacteriophage in Bacillary Dysentery.**—Feemster discusses the laboratory observations of an epidemic of 100 cases of ileocolitis, in which the Hiss-Y dysentery bacillus appears to have been the principal etiologic factor. The Hiss-Y dysentery bacillus was isolated from only 5.6 per cent of the stools collected from sick patients. Bacteriophage for the Hiss-Y dysentery bacillus was found in 80 per cent of the stools taken during the second week after the onset and in 45 per cent of those collected during the third week. The longest time after the onset in which bacteriophage was demonstrable was sixty-three days. None was found in the stools of a control group who had not been ill or in specimens obtained six months after the attack from patients who had recovered. Detection in the stool of a bacteriophage active against the bacillus causing an outbreak of dysentery seems to be a supplemental and valuable procedure for determining the etiology of cases of diarrhea.

## Journal of Lab. and Clinical Medicine, St. Louis

**19:** 1257-1376 (Sept.) 1934

Studies in Bacteriophage: I. Behavior of Bacteriophage and Bacteria in Lesion After Treatment of Acute Staphylococcus Skin Infections with Bacteriophage. Helen Zaytzeff Jern, E. L. Howes and F. L. Meleney, New York.—p. 1257.

Coronary Occlusion and Sudden Death: Study Based on Review of Three Hundred and Forty-Five Necropsies Performed at the Board of Health Laboratory, Ancon, Canal Zone, Between April 15, 1932, and April 15, 1933. E. DeCoursey, Ancon, C. Z.—p. 1272.

Alpha Dinitrophenol and Its Influence on Metabolism. W. E. Robertson, Philadelphia.—p. 1280.

Absorption of Dextrose from Human Gastro-Intestinal Tract. M. Wishnofsky, Brooklyn.—p. 1286.

Histochemical Studies of Organs of Tumor-Bearing Rats by Micro-Incineration Method. W. C. Hueper, Philadelphia.—p. 1293.

*Significance of Streptococci That Resemble Diphtheroids Recovered from Blood Cultures in Subacute Bacterial Endocarditis. J. A. Ferguson, T. P. Murdock and H. Welch, Hartford, Conn.—p. 1304.

Use of Galactose in Differential Diagnosis of Jaundice: Preliminary Report. K. A. Owen, Cleveland.—p. 1311.

**Streptococci That Resemble Diphtheroids in Subacute Endocarditis.**—Ferguson and his co-workers describe two cases of subacute bacterial endocarditis in which diphtheroid appearing organisms were recovered repeatedly from blood cultures during life. In one case, Gram-Weigert stained sections from a vegetation on the aortic valve at necropsy showed both diphtheroid appearing forms and chains of streptococci in each section. Bacteriologic investigation in both cases showed that the streptococcus under study existed in two phases, a typical streptococcus phase and a diphtheroid phase. The organism isolated from blood cultures in the diphtheroid phase changed under suitable conditions into a green producing streptococcus, which is unquestionably of etiologic significance.

## Journal of Pediatrics, St. Louis

**5:** 291-432 (Sept.) 1934

Some Aspects of Tuberculous Meningitis and Possibility of Its Prevention. A. Wallgren, Gothenburg, Sweden.—p. 291.

*Chronic Hypoglycemia in Childhood. B. Kramer, H. G. Grayzel and C. I. Solomon, Brooklyn.—p. 299.

Statistical Analysis of Whooping Cough Cases. J. A. Toomey, Cleveland.—p. 322.

Occurrence of Cataleptic Phenomena in Children. L. Kanner, Baltimore.—p. 330.

Low Calcium Tetany in the New-Born: Review of Literature and Report of Case. J. L. Rothstein, New York.—p. 341.

Mongoloid Imbecility in Mongolian Races: Report of Two Cases in Chinese Children. L. K. Sweet, Peiping, China.—p. 352.

Pseudohypertrophic Muscular Dystrophy: Further Observations of Therapeutic Effects of Glycine and Other Substances Used in Treatment of Fourteen Cases of Muscular Dystrophy. H. B. Mettel, Indianapolis.—p. 359.

**Chronic Hypoglycemia in Childhood.**—Kramer and his associates describe two cases of persistent chronic postabsorptive hypoglycemia in children. The first case presented a condition that is probably familial. The enlarged liver showed no glycogen but extensive fatty infiltration. There was sufficient hepatic tissue to perform its metabolic functions except that of glycogenesis. This primary failure to form glycogen from dextrose and the consequent absence of deposits of glycogen in the liver resulted in its secondary inability to mobilize the dextrose and maintain a normal blood sugar level. The authors advance a hypothesis for the presence of the fatty infiltration; e. g., the conversion of the dextrose into fat since the dextrose could not be transformed into glycogen. The nature of the hypoglycemia of the second child is still not known definitely. An associated organic condition of the central nervous system has raised the question as to whether this lesion is not respon-

sible for the hyperinsulinism rather than that the authors are dealing with a purely pancreatic hyperinsulinism due to neoplasm or hypertrophy and hyperplasia of the islands of Langerhans. They feel that, since up till now no definite case of hypoglycemia has been described due to a lesion of the central nervous system and since, on the other hand, there are a sufficient number of unquestionable cases of hyperinsulinism due to a pancreatic lesion, they are probably dealing with pancreatic hyperinsulinism and that the changes of the central nervous system are either secondary or independent of the primary condition.

## Kansas Medical Society Journal, Topeka

**35:** 329-368 (Sept.) 1934

Some Recent Developments in Physical Diagnosis. O. W. Bethea, New Orleans.—p. 329.
The Insanity of Hamlet. C. F. Menninger, Topeka.—p. 334.

## Laryngoscope, St. Louis

**44:** 683-764 (Sept.) 1934

Acute Sinusitis in Children Associated with Orbital Complications: Conservative Treatment: Report of Ten Cases. S. D. Greenfield, Brooklyn.—p. 683
Frontal Lobe Abscess (Multiple) Secondary to Frontal Sinusitis: Report of Case. W. Gordon, Philadelphia.—p. 717.
*Lateral Sinus Thrombosis: Report of Case. L. E. Wible, Pittsburgh, and H. B. Slotkin, Philadelphia.—p. 736.
A Year's Work with Ionization in Treatment of Hay Fever. A. M. Alden, St. Louis.—p. 741.
Mixed Tumor of Pharynx: Case Report. J. Ono, Philadelphia.—p. 745.
Metastatic Hypernephroma of Tonsil. L. C. Menger, Brooklyn, and I. Arons, New York.—p. 748.

**Lateral Sinus Thrombosis.**—Wible and Slotkin present a case, in a child of 6 years, that illustrates the problem of a masked sinus thrombosis in the presence of a complicating pneumonitis. When surgical intervention was finally resorted to, the true state of affairs was disclosed only when an aspirating needle in the lateral sinus drew forth pus. Thrombosis was present despite the fact that the tunica adventitia presented a normal appearance. An early diagnosis is of paramount importance. The Tobey-Ayer test was of no value in this case and may be misleading. Headache was not complained of. Papilledema, which was present, is seen more frequently with sinus thrombophlebitis than with either cerebellar or temporosphenoidal lobe abscesses. Metastatic arthritides were present and were represented by a subcutaneous abscess of the ankle and, later, by an arthritis of the sternoclavicular joint. The sternoclavicular joint is the one that is involved most frequently with lateral sinus thrombophlebitis. It rarely suppurates and has been referred to as a toxic arthritis.

## Medical Annals of District of Columbia, Washington

**3:** 233-254 (Sept.) 1934

Sulphur and Cystine in Relation to Arthritis. M. X. Sullivan, Washington.—p. 233.
Consideration of Tissue Diagnosis. R. M. Choisser, Washington.—p. 236.
Purposes and Value of Postmortem Examination. G. H. Hansmann, Washington.—p. 240.
Chemical Action of Nerves. O. S. Gibbs, Washington.—p. 244.

## Medicine, Baltimore

**13:** 251-376 (Sept.) 1934

Emphysema. W. B. Kountz and H. L. Alexander, St. Louis.—p. 251.
Observations on Etiology and Treatment of Anemia Associated with Hookworm Infection in Puerto Rico. C. P. Rhoads, New York; W. B. Castle, Boston; G. C. Payne, San Juan, Puerto Rico, and H. A. Lawson, Providence, R. I.—p. 317.

## Military Surgeon, Washington, D. C.

**75:** 197-276 (Oct.) 1934

Medical Progress and the War. W. N. Bispham.—p. 204.
Work of the Health Department of the Panama Canal During the Past Five Years. D. P. Curry.—p. 242.
Practical Value of Training Gained by Camp Surgeons on Duty with Civilian Conservation Corps. H. R. Hennessy.—p. 249.
*Stewart Treatment for Osteomyelitis: Preliminary Report. L. B. Kline.—p. 251.

**Treatment for Osteomyelitis.**—Kline employed in fourteen cases the trinitrophenol: calcium carbonate treatment for osteomyelitis described by Stewart. The trinitrophenol solution was sprayed into the wound from an ordinary nasal spray. In large wounds it was poured in. When lesions were deep in the tissues and drained through fistulous tracts, a soft rubber catheter was used and the solution was injected by means of a 5 cc. Luer syringe. The calcium carbonate suspension was applied to the wound immediately following the application of the trinitrophenol solution. The author has observed that granulation tissue forms promptly, purulent exudate is reduced, healing is rapid, pain and discomfort are minimized and the residual scar is less marked. He encourages free exercise of the affected part. The almost complete absence of pain permits better cooperation. He has used these mixtures in the treatment of ordinary infected wounds with satisfactory results.

## Missouri State Medical Assn. Journal, St. Louis

**31:** 341-376 (Sept.) 1934

Carcinoma of Prostate. G. H. Ewell, Madison, Wis.—p. 341.
*Coarctation of Aorta with Developmental Defect in Urinary Tract. R. M. Hardaway and H. P. Sawyer, Denver.—p. 346.
Ectopic Pregnancy: Diagnosis. E. L. Dorsett, St. Louis.—p. 353.
Cancer of Cervix: Iodine Reaction in Early Diagnosis. F. V. Emmert, St. Louis.—p. 355.
Fibromas of Small Intestine with Intussusception: Report of Two Cases. W. Smith and G. D. Callaway, Springfield.—p. 358.
Operative Treatment of Esophageal Diverticula. F. G. Thompson Jr., St. Joseph.—p. 361.
What Shall We Teach Regarding Chronic Appendicitis? B. L. Myers, Kansas City.—p. 363.
Cerebral Paralysis in Childhood. N. K. Pope, Marshall.—p. 368.

**Coarctation of Aorta.**—Hardaway and Sawyer cite a case of coarctation of the aorta with a developmental defect in the urinary tract. The patient died before any detailed observations could be made. Death was distinctly cardiac with progressive edema of the lungs that did not respond to medication. The blood pressure registered 300 mm. of mercury. There was a distinct narrowing of the descending arch much like a ligature that had been tied around the aorta and there was almost a complete septum within the lumen of the vessel; this septum contained an aperture about the size of a small goose quill. The pressure encountered by the blood stream resulted in marked collateral circulation with enlargement of the intercostal vessels and definite erosion of the right fifth rib and the left fifth and seventh ribs, which was manifested by roentgenograms, which showed the erosion definitely. It seems evident to the authors that a case of coarctation has the following diagnostic points that should lead to a definite diagnosis during life: (1) high blood pressure in the upper extremities with a slight discrepancy between the two arms and a marked discrepancy between the upper and lower extremities, (2) hypertrophy of the heart, (3) marked increase in the collateral circulation, and (4) erosion of the ribs. Postmortem examination revealed atrophy of the left kidney (apparently congenital), atresia of the left ureter due to the atrophy of the kidney, and fetal type of hypoplasia of the right kidney (arrested development).

## New England Journal of Medicine, Boston

**211:** 521-562 (Sept. 20) 1934

Physiology of Extreme Old Age. F. G. Benedict and H. F. Root, Boston.—p. 521.
Prevention of Reactions Due to Lumbar Spinal Puncture. P. G. Schube and F. LeDrew, Boston.—p. 537.
Antemortem and Postmortem Diagnoses. H. O. Swartout, Los Angeles.—p. 539.
Puerperal Inversion of Uterus: Report of Case. B. E. Sachs, White Plains, N. Y.—p. 542.
Problems Before the Medical Profession. D. Cheever, Boston.—p. 544.

## New Jersey Medical Society Journal, Trenton

**31:** 497-552 (Sept.) 1934

Intrathoracic Anatomy from Roentgenologist's Standpoint. W. W. Maver, Jersey City.—p. 503.
Problem of Silicosis: Practical Point of View. R. Pomeranz, Newark.—p. 508.
Classification of Anemia. R. L. Haden, Cleveland.—p. 511.
Pneumonia in Childhood. W. B. Stewart, Atlantic City.—p. 515.
Current Problems in School Health Work. A. G. Ireland, Trenton.—p. 519.
Arthritis Considered as Systemic Disease. R. Burbank, New York.—p. 522.
Problem of Medical Practice. J. A. Hartwell, New York.—p. 526.
Dispensary Abuses. L. W. Deichler, Philadelphia.—p. 532.
Are We Heading for the Last Round-Up? F. F. Borzell, Philadelphia.—p. 538.

## Ohio State Medical Journal, Columbus

**30:** 617-704 (Oct. 1) 1934

Study of Pathogenesis of Some Ulcers of Colon. M. O. Boudry and J. A. Bargen, Rochester, Minn.—p. 636.
Toxemias of Later Months of Pregnancy. J. T. Smith, Cleveland.—p. 642.
Retardation of Incipient Senile Cataract. J. W. Wright, Columbus.—p. 645.
Frequency of Cancer of Female Organs. F. E. Deeds, Sandusky.—p. 646.

## Pennsylvania Medical Journal, Harrisburg

**37:** 973-1136 (Sept.) 1934

*Eruptions from Drugs and from External Medicaments. F. Wise and Marion B. Sulzberger, New York.—p. 973.
Clinical Treatment of Certain Bone Diseases Caused by Hyperfunction of Parathyroid Glands. G. Wagoner, Philadelphia.—p. 983.
Tuberculous and Nontuberculous Pulmonary Infections in Infancy and Childhood. F. M. McPhedran, Philadelphia.—p. 985.
Tuberculous Lesions in Children of School Age. H. W. Hetherington, Philadelphia.—p. 990.
Carbohydrate in Diabetes: Newer Conceptions of Its Use. F. D. W. Lukens, Philadelphia.—p. 992.
Duties of Otolaryngologist to the General Practitioner. M. S. Ersner, Philadelphia.—p. 995.
Gallbladder Disease: Medical Versus Surgical Treatment. T. G. Miller, Philadelphia.—p. 996.
Lesions of Esophagus: Roentgen-Ray Study. W. F. Manges, Philadelphia.—p. 1000.
An Address Before the Pennsylvania Tuberculosis Society. D. Guthrie, Sayre.—p. 1004.

**Eruptions from Drugs.**—Wise and Sulzberger state that increasing knowledge of immunobiologic and sensitization phenomena has led to more or less obliteration of what at one time was regarded as a sort of dividing line between dermatitis medicamentosa and dermatitis venenata. The authors use the term "drug eruptions" to indicate all cutaneous (and mucosal) manifestations in the subject, without regard to the path taken by the drug, whether by oral administration, by injection, by external contact or by combinations of these. Among the toxicodermas, the allergic, anaphylactic eruptions, all those based on a hypersensitivity, predominate. The character of the manifestation depends on the terminal organ on or in which the hypersensitivity reaction takes place. Consequently, the hypersensitivity manifests itself in different types of reaction, as asthma, in the bronchial form; through phenomena on the part of the digestive canal, in the gastro-intestinal form; as hay fever, in reactions of the conjunctiva and the nasal mucosa; and, finally, in the form of definite skin reactions. The origin of one specific hypersensitivity may facilitate polyvalent specific sensitizations for further substances. There are certain phenomena in cutaneous hypersensitivity that apparently oppose the accepted concept of anaphylaxis and allergy, at least so far as the preservation of specific or monovalent sensitization is concerned. The cardinal eruptions caused by drugs ingested or injected are: 1. Truly eczematous eruptions with erythema, vesiculation, weeping and scaling are due to quinine, procaine hydrochloride, ephedrine, mercurials and sometimes arsphenamines. 2. Urticarial eruptions may be caused by belladonna, atropine, the morphine group and phenolphthalein. 3. Scaly erythematous eruptions, purely erythematous or scarlatiniform, and morbilliform and dermatitis exfoliative-like conditions are induced by arsenic, arsphenamine, belladonna, balsams and the heavy metals. 4. Phenolphthalein, antipyrine and salicylates produce erythema multiforme-like eruptions. 5. Erythema nodosum-like eruptions are due to iodides and bromides. 6. The effect of acneform, furunculoid and erysipelas-like eruptions is due to bromides, iodides, chlorine, oils, tars and so on. 7. The causal drugs in ulcerating and vegetating eruptions are bromides and iodides. 8. Purpuric eruptions may be due to iodides, arsphenamines, particularly sulpharsphenamine, and balsam. 9. Phenolphthalein, antipyrine and sometimes the arsphenamines induce fixed and circumscribed, erythematous or bullous and polychromatic pigmented eruptions. Eruptions due to external medicaments and other irritants include almost all well defined chemical substances, such as mercury, resorcin, butesin, butesin picrate, trinitrophenol, sulphur, chrysarobin, procaine hydrochloride, nupercaine and so on. There are many cases of eruptions in hypersensitive persons due to applications of medicinal salves, lotions, proprietary remedies and cases caused by skin contact during injection, but the overwhelming majority of the cases of eczematous dermatoses occur as industrial dermatoses. Many eczematogenous substances can be eliminated and many cases of dermatitis avoided by the patch test. The patch test permits of the choice and employment of the least deleterious substances.

## Tennessee State Medical Assn. Journal, Nashville

**27:** 331-378 (Sept.) 1934

Management of Traumatic Wounds of Soft Parts. E. T. Newell, Chattanooga.—p. 331.
Management of Brain Injuries. E. F. Fincher Jr., Atlanta, Ga.—p. 335.
Fractures of Ankle Joint. D. Eve Jr., Nashville.—p. 341.
Fractures of Humerus. J. Penn, Knoxville.—p. 344.
Brain Abscess of Temporal Lobe Secondary to Aural Infection. S. H. Sanders, Memphis.—p. 357.
Perinephric Abscess: Report of Case. M. G. Spingarn, Memphis.—p. 364.

## Western J. Surg., Obst. & Gynecology, Portland, Ore.

**42:** 497-554 (Sept.) 1934

Cretinism in the United States: Survey of Five Hundred and Twelve Cases. A. S. Jackson, Madison, Wis.—p. 497.
Psychoses of Hypothyroidism and Hyperthyroidism. L. J. Karnosh and G. H. Williams Jr., Cleveland.—p. 509.
Intrathoracic Goiter: Case Report. C. J. Hunt, Kansas City, Mo.—p. 529.

## West Virginia Medical Journal, Charleston

**30:** 433-480 (Oct.) 1934

Psychoneuroses. A. L. Osterman, Wheeling.—p. 433.
Medical Service: Professional Service. O. West, Chicago.—p. 439.
Surgical Treatment of Benign and Malignant Lesions of Stomach and Duodenum. W. B. Morrison, Columbus, Ohio.—p. 444.
What of Our Code? A. H. Hoge, Bluefield.—p. 452.
Some Medical Aspects of Thyroid Disease. R. A. Ramsey, Columbus, Ohio.—p. 457.
*Progressive Pseudohypertrophic Muscular Dystrophy. A. R. Lutz, Huntington.—p. 463.
Urticaria Following Use of Dinitrophenol. L. G. Beinhauer, Pittsburgh.—p. 466.

**Progressive Pseudohypertrophic Muscular Dystrophy.**—Lutz uses the epinephrine-pilocarpine treatment in practically all stages of progressive pseudohypertrophic muscular dystrophy. Administration has been by daily intramuscular injection of from 0.2 to 0.3 cc. of a solution containing one part of a 1 per cent solution of pilocarpine hydrochloride and two parts of a 0.1 per cent solution of epinephrine hydrochloride. He considers from six to eight weeks a "course of treatment." The patient is asked to return at monthly intervals for observation and is cautioned to continue the daily physical drill that was taught him during his stay in the hospital. Usually, after an interval of two or four months the disease starts to progress and the patient is admitted for another course of injections. The author has noted a definite clinical improvement in all his cases, and in two patients the improvement was so marked that they might have been classed as cured except for the fact that at the end of four months they returned with the disease again showing a slight progress. He believes that the glycine treatment sounds much more logical and has a much more scientific basis or excuse for its use than the epinephrine-pilocarpine method but lacks in clinical results. He considers the daily injection of pilocarpine and epinephrine a valuable treatment for pseudohypertrophic muscular dystrophy and that it will give symptomatic relief. Sufficient time has not elapsed to tell whether it will prolong life or alter the mortality rate, but it is fairly reasonable to assume that a child who is able to walk about stands a better chance than one who is not able to move from its bed.

## Wisconsin Medical Journal, Madison

**33:** 645-720 (Sept.) 1934

Injuries of Nerves and Tendons of Hand. S. L. Koch, Chicago.—p. 655.
Double Figure of Eight Bandage for Elbow. L. D. Smith, Milwaukee.—p. 661.
Congenital Absence of One Kidney with Associated Acute Postinfectious Hemorrhagic Nephritis, Anuria and Concomitant Uremia. S. M. Welsh and W. E. Bannen, LaCrosse.—p. 664.
Headaches of Infectious and Toxic Origin. S. E. Kohn, Milwaukee.—p. 668.
Endocrine Headaches. J. H. Sure, Milwaukee.—p. 671.
Headache in Cardiovascular Renal Diseases. B. J. Birk, Milwaukee.—p. 674.
Calcium in Treatment of Pulmonary Tuberculosis. T. Willett, West Allis.—p. 677.
Pathologic Findings in Three Hundred and Twenty-Five Roentgen Examinations of Kidney, Ureter and Bladder Regions. R. L. Troup, Green Bay.—p. 680.

## FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

### British Journal of Children's Diseases, London

**31:** 167-252 (July-Sept.) 1934

Story of Tracheotomy. E. W. Goodall.—p. 167.
Analysis of Over Four Thousand Cases of Educational Deafness Studied During Past Twenty-Five Years. M. Yearsley.—p. 177.
Helminthiasis in Children. P. D. Davydoff.—p. 193.
*Nocturnal Enuresis. C. J. C. Earl.—p. 205.
Some Pediatric Eponyms: VI. Eustace Smith's Sign. W. R. Bett.—p. 215.

**Nocturnal Enuresis.**—Earl, in stressing the value of psychologic treatment in nocturnal enuresis, discusses the incidental, causative, psychologic, regressive, physical and psychiatric factors. Such treatment should be carried out by a children's psychiatrist, or at a child guidance clinic. For the simple case of enuresis uncomplicated by other behavior disorders, simple suggestion, superficial and symptomatic though it may be, is adequate and efficient. The exact manner of its application may be used quite formally, as in hypnosis, or disguised under the name of medical treatment or training, having only the suggestive power as its common basis. The author believes that enuresis belongs definitely to Babinski's pragmatic definition of "pithiatism" as overt symptoms which can be "caused by suggestion and cured by countersuggestion or by persuasian."

### British Medical Journal, London

**2:** 455-498 (Sept. 8) 1934

Bacillus Coli Infections: Etiology and Treatment. D. M. Lyon.—p. 455.
Conditions Predisposing to Bacillus Coli Infection After Postoperative Retention. C. Dukes.—p. 458.
Value of Radiology (Diagnosis and Treatment) as Aid to the General Practitioner. J. H. D. Webster.—p. 460.
Radiology as Aid to the General Practitioner. E. Kaye Le Fleming.—p. 462.
*Contribution to Comparative Study of Tuberculin Tests in Infants and Children. G. G. Kayne and B. Weill-Hallé.—p. 464.
*Chloroform Hyoscine Amnesia in Labor. J. Clark.—p. 468.

**Comparative Study of Tuberculin Tests.**—Kayne and Weill-Hallé believe that the Moro test is the least sensitive of the three tuberculin tests commonly employed. The Pirquet (pure tuberculin) and the Mantoux test (1:1,000) are about equally sensitive, the Mantoux (1:100) being definitely more sensitive. For use in infants and young children the Moro test has definite disadvantages as regards technic and interpretation of results. When employed, a control test with ether only should be carried out. The Pirquet test is, for infants and young children, the simplest and easiest test to perform and therefore should be employed first. If found to be negative, an intradermal test with a dilution of 1:100 should be carried out. In older children it is worth while to repeat the test, if still negative, with a dilution of 1:10. The Mantoux test in a dilution of 1:10 should be carried out with a control injection of the broth used for the preparation of tuberculin. A Pirquet test should be regarded as positive only if there is at least 1 mm. of erythema on each side of the scarified area. The minimum required for a positive Mantoux test with any dilution is an area of erythema 10 mm. in diameter, associated with some swelling to touch or a well defined erythema greater in area than this. Reactions showing an erythema 5 mm. in diameter or more should be regarded as doubtful and reinspected on the fourth day and, if they are still doubtful or negative, the test should be repeated with a stronger dilution. If a reaction obtained with a dilution of 1:10 is definitely more marked on the fourth day than the control test, but still under the limit of a positive reaction, it is advisable to regard the test as doubtful and repeat it either within ten days or three months. The authors suggest that, instead of maintaining the controversy as to the relative value of the Pirquet and Mantoux tests, physicians should combine the two, the Pirquet test being followed by the Mantoux test 1:100 and adopted as a routine under a different name—for example, "the combined tuberculin test" or "the cutaneous intradermal test."

**Chloroform Scopolamine Amnesia in Labor.**—Clark presents a modification of the scopolamine method of amnesia in labor that is suited for home treatment. In ten years he has conducted eighty-four confinements in accordance with the following method: Treatment is commenced when the patient complains of pains that are regular and of moderate strength. The strength and duration of pains are gaged best by abdominal palpation. The patient is put to bed. One nurse is in attendance. An initial light anesthesia is induced by chloroform until the patient is quiet and sleeping between pains. A hypodermic injection of $\frac{1}{100}$ grain (0.00065 Gm.) of scopolamine is given as soon as the patient is lightly under. The scopolamine is repeated in doses of half this amount at intervals varying from half an hour to an hour. The ideal aimed at is that the patient should be drowsy and quiet between pains. Any indication of returning awareness can be controlled by immediate inhalations of chloroform and a subsequent injection of scopolamine. Chloroform controls any restlessness that scopolamine may produce. The initial administration of chloroform seems to have a subduing effect throughout. As labor progresses, the dose of scopolamine is diminished to $\frac{1}{300}$ or $\frac{1}{400}$ grain (0.0002 or 0.00015 Gm.) and the intervals of injection are lengthened or shortened according to the judgment of the practitioner. The author has always avoided giving any scopolamine during the hour immediately preceding delivery and administers light chloroform from the time that the anus assumes the D shape until the head is born. If labor is delayed, solution of pituitary may be used. The author states that in no case does the amnesia seem to affect the condition of the infant at birth. The delivery of the placenta is often delayed, but not unduly so. The mother sleeps or remains drowsy for some time. The amnesia lasts beyond delivery for a period that is directly proportionate to the extent of the amnesia induced during labor. The mother usually emerges from her amnesia with a strongly expressed disbelief that her baby has arrived.

### Journal of Neurology and Psychopathology, London

**15:** 1-94 (July) 1934

Acromegaly in One of Uniovular Twins. A. Lewis.—p. 1.
Psychoses Associated with Pernicious Anemia: Report of Two Cases. D. N. Parfitt.—p. 12.
Traumatic Encephalopathy (Punch Drunk) of Professional Pugilists. H. L. Parker.—p. 20.
*Calcium in Epilepsy. Gwenvron M. Griffiths.—p. 29.
Cholesterol Tumor (Craniopharyngioma) of Pituitary Body. F. P. Weber, C. Worster-Drought and W. E. C. Dickson.—p. 39.
*The Hydrogen Ion Concentration and Lactic Acid Content of Cerebrospinal Fluid. I. Harris, E. W. Jones and C. N. Aldred.—p. 46.
Colloid Cyst of Third Ventricle Associated with Congenital Cystic Kidneys. E. W. Jones and D. H. Collins.—p. 53.

**Calcium in Epilepsy.**—Griffiths made repeated observations of serum calcium on a group of forty-eight young epileptic patients who were living a normal school and outdoor life in an epileptic colony. Samples of blood were taken at various times of the day and at varying intervals over a prolonged period, in the hope of obtaining a sufficient number of observations so that the time of the fits could be correlated. Estimation of 433 serum calcium readings was obtained. It was observed that the average serum calcium falls within normal limits, though the range of values is wide and variable, for the group and for individuals alike. The average of values before a fit is found to be greater than that after a fit. The highest range of values is that obtained during a succession of fits, while low values are found after successive fits. In two cases that terminated fatally, estimations made during successive fits proved to have definitely low values. When cases of fits by day are contrasted with those by night, the averaged figures show that the behavior of the serum calcium in relation to the attacks varies inversely in the two groups. This inversion is confirmed in a striking manner in one particular case, which gives low values after day fits, high values after night fits and a persistent median value in intervals free from fits. Treatment with large doses of calcium may have beneficial results, while the diminution of serum calcium by sesquiphosphates is definitely detrimental. Serum phosphorus is found to be within normal limits, though with a wide range of variation. Its relation to the serum calcium is not always disturbed by fits, though abnormal ratios may be associated with attacks.

**Hydrogen Ion Concentration of Cerebrospinal Fluid.**—Harris and his co-workers maintain that the current teaching according to which the spinal fluid is more alkaline than blood

is erroneous. They believe that their figures are reliable, because they employed a method for the determination of $p_H$ which is superior to those available to previous workers in the same field. So far as they are aware, none of these investigators used the glass electrode. The glass electrode was employed and was adapted for the use of blood and spinal fluid. To avoid loss of carbon dioxide, the method used was as follows: The ordinary cannula in use for cerebrospinal work was employed. Connected to it was a piece of fine rubber tubing of a narrow bore, about 3 inches in length. The distal end of the tubing was inserted in the inner chamber of the electrode. This chamber fills up with fluid and overflows, so that the fluid whose $p_H$ was taken never came in contact with air. Twelve inpatients were investigated. Only once did the $p_H$ exceed 7.4, all the others being below this figure. There was a definite relation between the $p_H$ of spinal fluid and that of blood and the latter was more on the alkaline side than the former. It is impossible to establish absolute values for the $p_H$ of the spinal fluid unless the acid balance of the blood also is determined. As is to be expected, there is no relationship between lactic acid and the $p_H$ reading. The authors state that an explanation why the cerebrospinal fluid is more acid than blood may be found in the difference of behavior of carbon dioxide in these two fluids. The lactic acid contents of cerebrospinal fluid and blood are approximately the same, provided sufficient time is allowed for an equilibrium between the two fluids to be established.

## Medical Journal of Australia, Sydney

**2:** 209-240 (Aug. 18) 1934

Present Need for Study of History of Medicine. St. C. Thomson.—p. 209.
Hormone Control of Female Reproductive System. R. M. Allan.—p. 212.
Local Anesthesia: Its Application to Reduction of Fractures of Long Bones and Dislocations of Joints. R. J. Stabback.—p. 220.
Pertussis Vaccine. Hilda Bull.—p. 223.
Radium Colpostat. Sylvia Bray.—p. 224.

**2:** 241-272 (Aug. 25) 1934

*Branchiogenic Cancers and Other Carcinomas of Neck of Cryptic Origin. J. B. Cleland and B. S. Hanson.—p. 241.
Venoms of the Broadheaded Snake (Hoplocephalus Bungaroides) and of the Yellow-Banded Snake (Hoplocephalus Stephensi). C. H. Kellaway.—p. 249.

**Branchiogenic Cancers and Carcinomas of Neck.**—Cleland and Hanson believe that a common explanation of the occurrence of at least some of the carcinomatous and squamous epithelioma growths of the neck is that they are derived from the epithelium of a branchial cleft. In the majority of cases the malignant growths in the neck are clearly secondary to recognizable primary growths in neighboring structures, or sometimes to those at a distance. Tumors of the carotid body have characteristics of their own. In or near the midline or close under the jaw growths may arise from remnants of the thyroglossal duct or from outlying portions of a duct of a salivary gland, but by the time treatment is sought the size of the growth precludes a recognition of such an origin. Occasionally cases of carcinoma in the neck may originate from remnants of the branchial epithelium; in fact, the total absence of such carcinomas would be remarkable. The occurrence of branchial cysts is an indication that the branchial clefts may be closed imperfectly. Apart from the formation of actual cysts, islands of epithelial cells may be left behind as the branchial cleft closes, and late in life these dormant cells may be stimulated into activity and be responsible for branchiogenic cancers. Dental cysts, lined by squamous epithelium and surrounded by plasma cells, are believed to originate from irritation, usually caused by infection, of groups of epithelial cells left behind by the enamel organ during development. A recent alternative theory is that the cysts are really the ends of sinuses lined by epithelium which has descended from the surface of the gum. A frank squamous epithelioma may develop rarely in the squamous epithelium lining a relatively innocent cyst. It is possible that a small and unrecognized branchial cyst of long duration may be responsible at times for a squamous epithelioma, the mass of growth soon obliterating the cavity and a solid growth of cryptic origin resulting. Some presumed branchiogenic cancers are cystic, probably from secondary degeneration. The possibility of the healing of small primary growths, some of whose cells may have escaped previously into the draining glands, is considered. Though it is perhaps possible for a small epitheliomatous ulcer to undergo healing from destruction of the malignant cells by fibrosis, the likelihood of this occurring must be small. In accessible sites, healing of malignant growths probably does occur from time to time. The possibility of the introduction of cells from the malpighian layer of the skin into the lymphatics as a result of trauma must be considered; for instance, puncture wounds by spicules of bone during eating. From time to time examples of inclusion or implantation cysts in the subcutaneous tissue are seen resulting either from nipping off of a little epithelial fragment during surgical operations or from pushing into the tissues, that is by the blunt end of a needle, of a little group of cells from the deeper layer of the surface epithelium. It is possible that such puncture wounds may sometimes carry epithelial cells into the lymph spaces, whence they may be carried to the draining glands and there grow.

## Tubercle, London

**15:** 529-576 (Sept.) 1934

Prognosis of Pulmonary Tuberculosis Complicated by Cavitation. B. R. Clarke.—p. 529.
Institutional Treatment of Tuberculosis: Plea for Large Self-Contained Medical and Surgical District Units. J. Crocket.—p. 537.
*Allergy in Tuberculosis: Quantitative Use of the Mantoux Test. J. S. Westwater.—p. 543.

**Mantoux Test in Assessing Allergy in Tuberculosis.**—Westwater has used the Mantoux tuberculin test as a means of assessing allergy in tuberculosis. He emphasizes Zinsser's definition that the allergic state is "an increased capacity to react against an antigen released by the disintegration of the bacillus." This disintegration will require an active resistance to break through the lipoid sheath of the bacillus and release the protein; it is the release of this protein which gives rise to the allergic reactions. The author regards allergy as the common property of infected persons; whether they are diseased or not depends on their resistance. From 80 to 90 per cent of the adult population are known to be allergic but have not tuberculous disease, so that in man successful resistance is not contingent on a lack of allergy. This allergic property, however, in its variations reflects the activity not of the infection but of the immunity response. From clinical results in children there is the suggestion that the higher degrees of allergy are found only with active resistance—with disintegration of the invading bacilli. When the immunity mechanism is not active, i. e., in the stage of quiescence and latency, allergy tends to wane, but the property is still there. The same interpretation can be placed on the results in adult phthisis—increase in allergy occurs only in cases responding to treatment—i. e., in cases showing active and to a varying degree successful resistance. On the other hand, when resistance is overcome and swamped, allergy wanes, as presumably the invading bacilli are not being broken up to the same extent. In tuberculosis then there are the three factors: infection, immunity and allergy or sensitivity. Infection is directly opposed to immunity; allergy is a property that may perhaps be inconvenient to the immunity mechanism. These results suggest that allergy or sensitivity to the tubercle protein is probably a minor factor in the pathology of tuberculosis.

## Chinese Medical Journal, Peiping

**48:** 701-808 (Aug.) 1934

Outbreak of Pellagra in Nanking: Report of Thirty Cases. C. S. Yang and K. K. Huang.—p. 701.
Pellagra in Manchuria: Report of Three Cases. K. Y. Yu.—p. 724.
Traumatic Dislocation of Hip in Childhood: Report of Two Cases. C. M. Meng.—p. 736.
Estimation of Blood Calcium and Potassium in Parkinsonism. C. C. Lee.—p. 738.
Autogenous Serum Treatment for Opium Addicts. L. S. Huizenga.—p. 741.
Torsion of Pregnant Uterus. N. J. Eastman.—p. 745.
Pregnancy After Multiple Ligature with Section of Fallopian Tubes. J. P. Maxwell.—p. 748.
Incidence of Tuberculous Infection Among Chinese in Shanghai. D. G. Lai, C. L. Kao and P. N. Chien.—p. 750.
Incidence of Disease in Selected Hospitals in China for 1933: Chinese Medical Association Hospital Survey. H. S. Gear.—p. 758.

## Archives des Maladies du Cœur, Paris

**27:** 517-579 (Sept.) 1934

*Prognostic Significance of Inversion of T Wave in Lead 3 Associated with Right Heart Predominance in Lead 3. A. Clerc, R. Lévy and R. Lefèbvre.—p. 517.
Study of Cardiac Mechanism (Double Integral Command). E. Géraudel.—p. 524.
Clinical Study of Gallop Sound (Tactile Presystolic Reduplication of First Sound). D. Routier and A. Van Bogaert.—p. 541.
Electrocardiogram in Case of Heart Wound. D. Routier and F. Joly.—p. 551.

**Inversion of T Wave in Lead 3.**—Clerc and his collaborators selected only those electrocardiograms which showed inversion of the T wave in lead 3 with so-called right axis deviation or the latter alone without other abnormalities. This group comprised twenty-six patients, fifteen with the combination and eleven with right axis deviation alone. These changes were found to correspond to cardiopathies based on mitral lesions, congenital cardiopathies, congenital or acquired lesions of the pulmonary artery, or secondary cardiopathies resulting from chronic pulmonary or thoracic alterations. In the first group of fifteen patients with negative T wave and right axis deviation there were six fatalities, while in the second group of eleven with right axis deviation alone there were no deaths. The authors therefore believe that there is a definitely poor prognostic significance attached to this type of electrocardiographic abnormality.

## Presse Médicale, Paris

**42:** 1385-1400 (Sept. 5) 1934

*Clinical and Therapeutic Contribution to Study of Paragangliomas and Crises of Epinephrine Hypertension. J. Bauer and R. Leriche.—p. 1385.
Intra-Arterial Pressure: Control of Indirect Methods. R. Giroux.—p. 1388.

**Paragangliomas and Epinephrine hypertension.**—Bauer and Leriche describe a case of paroxysmal hypertension in a man, aged 40. The crises began with epigastric malaise, mild nausea, pallor of the face and extremities, coldness to touch, pounding heart, ocular pulsations, sweating and often mild trembling of the fingers. They lasted from half an hour to an hour and a half, after which a heavy feeling in the head and marked lassitude persisted for several hours. They began in the mornings. Between the attacks the pulse was 72 to 88 and the pressure 160-180/115-125 mm. of mercury. During the crisis the systolic pressure rose more or less while the diastolic pressure remained the same or fell a few millimeters. The pulse did not change in mild attacks but was notably slowed in the severe ones. The authors believe that quite likely they were dealing with essential paroxysmal hypertension of suprarenal origin. Localization of the suspected tumor was not possible. Finally it was decided that operative investigation of this possibility was justifiable. After an unsuccessful attempt on the right side (the suprarenal appeared normal) a tumor was found in the left suprarenal. This was removed and found to have all the characteristics of a paraganglioma. The results of the procedure were good and the patient returned to a normal state. The authors state that the diagnosis is difficult but rests on the constant or lowered diastolic pressure during the attacks, a bradycardia, a paroxysmal and transitory hyperglycemia and perhaps also an increase in the leukocytes and erythrocytes. The advisable therapy is operative because of the poor prognosis when any other form of treatment is used. Removal of a normal suprarenal must be guarded against in these cases.

## Revista Medica del Rosario, Rosario de Santa Fe

**24:** 743-876 (Aug.) 1934. Partial Index

*Treatment of Trigeminal Neuralgia. T. Fracassi and F. L. Marelli.—p. 743.
Electrocardiogram in Complete Auriculoventricular Dissociation. D. Staffieri.—p. 760.
Hysterosalpingography in Diagnosis, Prognosis and Treatment of Sterility. P. E. Borras.—p. 769.
Treatment of Vulvovaginitis by Basic Aniline Fuchsin. E. A. Travella.—p. 809.
Immediate Action of Digitalis on Volume of Blood in Circulation. E. Levin.—p. 838.

**Electroneurolysis in Therapy of Trigeminal Neuralgia.**—Fracassi and Marelli treat essential trigeminal neuralgia by electroneurolysis with the following technic: The patient lies on his back on a flat table with the head in such a position that the involved nerve forms the continuation of a vertical line with the needle introduced vertically. This position of the nerve in relation to that of the needle is obtained by the inclination or by the elevation of the patient's head without changing the position of his body and is controlled by the position of the foramen ovale and the foramen rotundum. To approach the inferior and superior alveolar nerves the patient's head is inclined in the first case and raised in the second case 15 degrees from a line horizontal to the axis of his body. The needle used is one of those commonly used for intramuscular injections, not exceeding 4 or 5 cm. in length. A fine insulated copper wire, which can easily pass through the eye of the needle, previously disinfected with alcohol, is used as a mandrin. The layer of insulating thread of the mandrin is removed at one end 3 or 5 cm., and a knot made in the mandrin as a mark to indicate the length which should be introduced in order to have its point pass the point of the needle. The other end of the wire is then connected with a galvanic current. A painful sensation of the patient, exteriorized by an involuntary gesticulation, indicates that the point of the mandrin is in contact with the involved nerve. The current is then stopped in order to perform the anesthetization of the nerve by infiltration of 1 cc. of a 2 per cent solution of procaine hydrochloride-epinephrine. Four or five minutes later the isolated mandrin is introduced down to the mark previously made on it. The other end of the wire is then connected to a galvanic current and this current is permitted to pass in a slow and progressive form until 5 milliamperes has been given during three or five minutes at each pole. The positive pole should be applied before the negative one, because the former adheres to the nerve and it is detached from it only by the passage of a negative current. Because of the fineness of the mandrin, the galvanic current does not destroy the tissues of the nerve during the first application. A second application, given three or four days later with the same technic, results in the destruction of a new zone of the nerve and the complete disappearance of the pain. In the authors' cases the pain has not reappeared up to the present (six months after the treatment). They advise resorting to alcoholization of the nerve with 2 or 3 per cent phenolated alcohol in cases in which the galvanization is impracticable. Phenolated alcohol is more efficient than absolute alcohol in these cases.

## Archiv für Gynäkologie, Berlin

**157:** 429-621 (Aug. 18) 1934. Partial Index

Surgical Sterilization of Women. A. Döderlein.—p. 429.
Pregnancy During Existence of Rectocervical Endometriosis and Tar Cysts. O. von Franqué.—p. 446.
Sterilization of Women According to Menge. K. Kayser.—p. 452.
New Method for Automatic Continuous Registration of Uterine Contractions. W. Rech.—p. 458.
*Genesis of Hyperemesis of Pregnancy. F. Schultze-Rhonhof.—p. 462.
*Heating Deeper Parts of Human Organism in Short Wave Field. F. Schultze-Rhonhof and W. Rech.—p. 468.
Carbohydrate Metabolism in Various Obstetric and Gynecologic Conditions Including Diabetes and Pregnancy. E. W. Winter.—p. 509.
Congenital Atresia of Esophagus with Esophagotracheal Fistula in Severe Hydramnion of Mother. V. Deppisch.—p. 521.
Spontaneous Change of Frontal Presentation into Occipital Presentation During Period of Expulsion. T. Heynemann.—p. 529.

**Genesis of Hyperemesis of Pregnancy.** — Schultze-Rhonhof points out that some investigators assume a purely psychic while others assume a purely organic cause of hyperemesis of pregnancy. He believes that as a rule both factors are involved but considers the psychic factor the more important. That organic factors are involved is proved by the fact that vomiting is a rather frequent occurrence in pregnancy, and hyperemesis is really only an exacerbation of this vomiting. Many women are subject to nausea before they are aware that they are pregnant. This early nausea is no doubt the result of the presence of toxic substances that sensitize the center of vomiting and the vagus and thus reduce the threshold of irritation so that psychic influences lead to vomiting more readily. The predominating importance of the psychic component in hyperemesis is indicated by the fact that as a rule hyperemesis does not become manifest until the woman is aware that she is pregnant. The author noted also that hyperemesis is comparatively rare in unmarried pregnant women. He thinks that the greater incidence in married women is due

to the fact that married women get more attention and sympathy from their environment, particularly the husband. The motivating factors may differ, the woman may want to call her husband's attention to the great sacrifice on her part, or she may have a desire to get even and make her husband share in her discomfort. The woman is of course rarely conscious of such desires. One of the most important factors in the development of hyperemesis is that she is given attention by her environment if she gets severe attacks of vomiting. Taking her out of her environment often results in cure within a comparatively short time, while a visit from the family often results in a relapse. In some cases the hyperemesis may be a defense mechanism, the manifestation of an aversion against intercourse, which develops in some pregnant women. An escape into illness makes it possible for the married woman to reject the intercourse. The greater incidence of hyperemesis during the first pregnancy is a further proof of the significance of the psychic factor, for the woman usually has to overcome greater psychic conflicts. Moreover, hyperemesis is rare in psychically well balanced women. The author admits that his theory does not necessarily apply to all cases, and he does not exclude the possibility of a different pathogenesis for some cases.

**Heating of Deeper Parts in Short Wave Field.**—Schultze-Rhonhof and Rech report observations which indicate that the application of a 30 meter wave in the short wave field does not produce a measurable heating of the deeper layers of the tissues. Such an effect had been demonstrated in preliminary experiments on bread. The fact that this is not the case in human tissues proves the great significance of the heat regulators of the human organism. This lack of heat action on the deeper layers in short wave therapy of abdominal organs concerns of course only the mechanism of the therapy and does not involve a criticism of the efficacy of the treatment, which is often quite clear. The authors' experiments provided only a certain insight into the thermo-electric but not into the electrochemical actions of the short wave therapy.

## Monatsschrift f. Geburtshülfe u. Gynäkologie, Berlin

**97:** 253-316 (Aug.) 1934

*Renal Function in Pregnancy Toxicoses and Eclampsia. K. de Snoo.—p. 253.
Innervation of Uterine Tubes. V. Conill.—p. 266.
Treatment of Menopausal Hemorrhages by Means of Vaporization. K. Holzapfel.—p. 269.
Histopathogenesis of Tar Cysts and Pathology of Vulvovaginal Gland. J. Czyzak.—p. 274.
Focal Disorders in Toxicoses of Pregnancy. G. von Bud.—p. 285.

**Renal Function in Toxicoses of Pregnancy and Eclampsia.**—On the basis of his studies de Snoo reaches the conclusion that for clinical purposes the bromide lye method is entirely satisfactory for the determination of urea in the blood. This was determined in comparison with the urease method. The author observed that in simple toxicoses the disturbances of the renal function are rarely severe and that in chronic hypertension, even in cases presenting severe uremic disturbances, the renal function is as a rule only slightly or not at all impaired, but that in women who have passed through an eclampsia the renal function is in general severely impaired as to the elimination of water and the secretion of urea. In the latter group of women, the urea content generally increases up to the second, third or fourth day, and after that it decreases again, irrespective of whether the women have been delivered or not. The secretion of urine becomes normal sooner than the elimination of the urea. The author thinks that the increase in the urea content of the blood is not dangerous and that the prognosis is dependent to a greater extent on the diuresis than on the urea content. He found also that in many cases of eclampsia the renal function may be entirely normal before the onset of the convulsions and that the convulsions exert no specific influence on the kidneys, but that the same functional disturbances may occur without convulsions. He thinks that renal disturbances may be caused by vasomotor disorders, particularly vascular spasms, and that the parenchymatous organs of pregnant women with toxicosis are especially susceptible to such vasomotor disorders. He shows further that disorders of the kidney may develop as the result of thirst and vomiting and in the absence of a urea retention, and that the urea content of the blood is a valuable aid in estimating the seriousness of hyperemesis of pregnancy.

## Monatsschrift für Kinderheilkunde, Berlin

**60:** 321-400 (Aug. 3) 1934

*Eosinophile Cells in Healthy and Tuberculous Children Following Epinephrine Tolerance Test. T. von Krompaszky.—p. 321.
Specific Therapy of Whooping Cough. O. Bäumler.—p. 330.
*Tetany After Feeding with Fruit Juices as Substitute for Milk. O. Bäumler.—p. 336.
State of Health of Children Entering School in 1934. A. Keller.—p. 343.
Relations of Lysozyms to Avitaminosis A. M. Frank.—p. 345.
Hematology of Avitaminosis A. M. Frank.—p. 350.
Gastric Diverticulum and Cascade Stomach in Children. W. Schwenk.—p. 356.
Intake of Vitamin A by Hungarian School Children. K. Waltner.—p. 361.

**Eosinophils Following Epinephrine Tolerance Test.**—Von Krompaszky decided to study the relation between the suprarenal system and the eosinophile cells, and particularly whether the epinephrine eosinophilia changes in the course of certain diseases. In healthy children it was found that the injection of epinephrine increases the number of eosinophils and that the number of leukocytes increases, as a rule, but not as regularly as does the number of eosinophils. Tests on children with tuberculosis revealed that in one group the effects of epinephrine were the same as in the healthy children, while in a second group an entirely different behavior obtained in that the epinephrine injection was followed by a decrease in eosinophils. It was found that the majority of the children belonging to the first group had a mild tuberculosis, while the majority of those belonging to the second group had a severe form of tuberculosis. In determining the causes of the effect of epinephrine on the eosinophils, the author points out that under the influence of epinephrine the bone marrow eliminates greater amounts of leukocytes, which becomes manifest in the appearance of an increasing number of young leukocytes. The fact that in severe forms of tuberculosis there is no increase in the number of eosinophils after injection of epinephrine is probably due to impairment of the leukopoietic apparatus.

**Tetany After Feeding with Fruit Juices.**—Bäumler compared the constituents of a fruit juice extract that had been recommended as a substitute for mother's milk with those of mother's milk. He found that the so-called fruit-milk is nearly equivalent to human milk as regards the nutritive substances, the calories and the minerals. It differs from human milk mainly in one factor, its calcium deficiency. Whether this mixture of fruit juices reaches the biologic value of human milk depends on three factors: (1) whether feeding with the fruit-milk results in the normal development of the nursling, (2) whether it can replace mother's milk in nurslings with nutritional disturbances and (3) whether it will prevent rickets and tetany. The author cites a case history which reveals that a nursling, who since the end of the second month of life had been fed with the fruit-milk, had a mild form of rickets and also manifested symptoms of tetany at the end of the fifth month. This indicates that the fruit-milk does not prevent rickets and tetany and thus does not have the biologic value of human milk.

## Münchener medizinische Wochenschrift, Munich

**81:** 1261-1296 (Aug. 17) 1934. Partial Index

Increased Milk Secretion by Antithyroid Protective Substance. H. Küstner.—p. 1261.
Experiences with Iodine Therapy in Exophthalmic Goiter. H. Dennig and E. Schuelke.—p. 1263.
*Special Form of Funicular Spinal Disease and Its Therapy. E. Illing.—p. 1265.
Brucella Abortus Infection with Gastro-Intestinal Hemorrhages. L. Krohmann.—p. 1268.
Significance of Palpitation. H. Müller.—p. 1270.
*Treatment of Gastric Ulcer with Histidine Preparation. L. Bogendörfer.—p. 1270.
Influence of Salt Baths on Circulation with Especial Consideration of Natural Potassium Bath Salt. E. Lendel.—p. 1272.
*New Method of Percussion. Hasse.—p. 1273.

**Funicular Spinal Disease and Its Therapy.**—Illing describes the histologic aspect of funicular spinal disease and shows how it differs from the changes characteristic for tabes and for multiple sclerosis. Parallelism between the clinico-neurologic and the anatomic aspects is often missing in funicular spinal disease. Moreover, this disorder is frequently only a symptom of an internal disorder. In more than half of the cases it concurs with pernicious anemia, but the author is

primarily interested in the cases in which funicular spinal disease is the only disorder and in which achylia, psychosis and disturbances in the hematopoiesis are absent. He observed four cases of this nature. The first symptoms of the disease appeared from six to twelve months before admission to the clinic. Three patients, women of the menopausal age, complained of a feeling of numbness or of formication in the feet and hands and of weakness in the legs and arms, and one complained of occasional urinary incontinence. The serologic tests for syphilis were negative. The neurologic manifestations were most severe in the legs. In two patients the symptoms of an involvement of the dorsal funiculus predominated, but they were mixed with spastic symptoms. In the other patient spastic symptoms predominated. Since vitamin B has an antineuritic effect, the author decided to try treatment with yeast in the three women. They were given yeast three times each day, and considerable improvement resulted. It is assumed that the yeast treatment arrested the further progress of the spinal disorder. The author admits that a complete cure cannot be expected, since nervous tissue, once destroyed, cannot be repaired, but in new cases the paresthesias may disappear. He suggests that the funicular spinal disorders in which pernicious anemia is absent may be the result of avitaminosis.

**Treatment of Gastric Ulcer.**—Bogendörfer resorted to the intramuscular injection of a histidine preparation in patients with gastric and duodenal ulcers. He used a preparation 1 cc. of which contained 0.04 Gm. of histidine monohydrochloride. The daily administration of 5 cc. caused no undesirable complications. The author employed the treatment in about thirty cases. All other medicinal treatments were discontinued while the histidine preparation was administered. The result was that the pains disappeared rapidly, and within a comparatively short time the patient could be put on an ordinary diet. The author gives brief clinical histories of three cases which indicate that the patients could be discharged from the clinic in from two to three weeks. A satisfactory explanation of the action mechanism of this treatment is still lacking, but experiments are now being conducted to determine the influence exerted by the preparation on the gastro-intestinal functions.

**New Method of Percussion.**—Hasse corroborates the efficacy of the friction method described by Bukovala in the *Münchener medizinische Wochenschrift* (**81**:1026 [July 6] 1934; abstr. THE JOURNAL, Aug. 25, 1934, p. 636). He asserts that he employed this method with excellent results for thirty years. However, he wishes to call attention to still another aid that is helpful in determining the outlines of organs, particularly in the auscultatory comparison of the two lungs. If the sound tube of the binaural stethoscope is held in the fold between the right thumb and the hand, it is possible to percuss the forefinger of the left hand with the middle finger of the right hand. The conduction of the percussion sound by the middle finger, the sound tube and the tubing into the two auditory meatuses increases the intensity of the percussion sound by two or three times its volume, so that this method permits the perception of sound values that otherwise cannot be heard. The author thinks that this rather simple procedure is helpful in the usual methods of percussion as well as in the friction method. Control tests before the roentgen screen corroborated the fine differences detected with the described method.

**81:** 1335-1372 (August 31) 1934

*Arrest of Severe Hemorrhages in all Forms of Hemorrhagic Diathesis and of Hemophilia by Parenteral Administration of Vitamin C. A. Böger and H. Schröder.—p. 1335.
*Problem of Psittacosis. Gutzeit and Johannsen.—p. 1337.
Hypnosis in Treatment of Chorea Minor. M. Eszenyi.—p. 1340.
Choleretic Substances. P. A. Popow.—p. 1342.
Habitual Curvatures of Vertebral Column and Their Treatment. Gaugele.—p. 1344.
Simultaneous Existence of Duodenal Ulcer and of Biliary Disturbance. H. Müller.—p. 1348.
Duck Eggs as Carriers of Enteritis Bacilli. H. Bruns and Fromme.—p. 1350.

**Arrest of Hemorrhages in Hemorrhagic Diathesis and Hemophilia by Vitamin C.**—The favorable effects produced with the parenteral administration of vitamin C (ascorbic acid) on capillary hemorrhages induced Böger and Schröder to try this therapeutic method in other hemorrhagic diatheses. In a case of Schoenlein-Henoch's purpura, they found that the daily intravenous administration of 100 mg. of an ascorbic acid preparation effected a rapid disappearance of the manifestations of the capillary toxicosis. This was the more surprising since the oral medication with vitamin C had been ineffective. The failure of the oral medication may be the result of the gastro-intestinal disturbances that frequently accompany the avitaminoses. The authors succeeded also in arresting severe intestinal hemorrhages in a hemophylic patient with the daily intravenous injection of 150 mg. of the ascorbic acid preparation. In a patient with "acute" essential thrombopenia, in whom there existed an almost complete lack of thrombocytes and severe hemorrhages of the skin, the mucous membranes and the kidneys, the daily intravenous injection of 150 mg. of the ascorbic acid preparation accomplished the cessation of the hemorrhages within four days. This case is especially noteworthy because the hemorrhages ceased before there had been an increase in the blood platelets. The increase in the thrombocytes did not take place until two days after the complete cessation of the hemorrhages. The authors conclude from this that thrombocytopenia is not the only factor in Werlhof's disease but that a permeability of the vascular walls is likewise of some importance. They think that vitamin C exerts an influence on the vascular permeability but also modifies the albumin factor in the plasma. They hope that the parenteral vitamin C therapy of hemorrhagic disorders will be tried in other clinics.

**Psittacosis.**—Gutzeit and Johannsen report an increased incidence of psittacosis in Berlin during the first few months of 1934. In discussing the roentgenograms of psittacosis pneumonia, the authors point out that in contradistinction to the rather atypical clinical symptoms, which resemble those of bronchitis, the roentgenograms are typical. They show extensive infiltrative pulmonary processes either on one side of the lung or many, sometimes successively developing, small areas of denseness on both sides. The structure and the outlines of the infiltrates of psittacosis are characteristic and can be differentiated from those of bronchopneumonia and of lobar pneumonia by their uniform and finely granulated structure. At the onset of the infiltration a fine veil of denseness, without foci of greater denseness, seems to be spread over the still visible, normal structure of the lung. As densification advances the veil extends further and gradually covers the structure of the lung, but there is always a characteristic uniformity of denseness. The treatment employed by the authors was purely symptomatic. During the severest stage, when a general toxicity predominated, circulatory and cardiac remedies were given also as in the typical pneumonias, quinine and urethane, packs of the chest and cold spongings. Small doses of amidopyrine proved helpful in reducing the fever. The clinical diagnoses of the cases observed by the authors were corroborated in animal experiments. The birds that were the source of infection had been in contact with some of the patients for nine months. The authors conclude from this that the virus is eliminated only at times, and they point out that parrots may be carriers of the virus without showing signs of the disease. They suggest measures for the prevention of psittacosis.

## Strahlentherapie, Berlin

**50:** 529-720 (Aug. 15) 1934. Partial Index

Selective Treatment of Carcinoma of Cervix Uteri. M. Bolaffio.—p. 566.
Principles of Roentgen Tube Introduced into Body Cavities and of Its Application. W. Schaefer and E. Witte.—p. 579.
Seminoma of Testicle and of Ovary. A. Béclère.—p. 597.
Lympho-Epithelial Tumors. E. Maier.—p. 611.
*Roentgenotherapy of Ankylopoietic Spondylarthritis. F. Haenisch.—p. 623.
*Treatment of Actinomycosis. O. Dyes.—p. 641.
Failure of Castration and Sterilization by Means of Roentgen Rays in Patients with Pulmonary Tuberculosis. F. von Mikulicz-Radecki.—p. 658.
Roentgenotherapy of Paradentitis: Technic and Method. K. Staunig.—p. 677.
*Formation of Hydrometra After Postoperative Radium Treatment on Account of Ovarian Carcinoma. E. Vogt.—p. 683.
Roentgen Meter for Small Quantities of Rays. J. Frank.—p. 687.
*Action of Intravenous Injection of Radon on Blood. M. Nemenow and R. Gurewitsch.—p. 693.

**Roentgenotherapy of Ankylopoietic Spondylarthritis.**—Haenisch employed roentgenotherapy in thirteen rather severe cases of ankylopoietic spondylarthritis. In three patients the treatment proved ineffective, but in two of these the period of

observation and treatment has been too short to permit a definite evaluation. In the remaining ten cases the subjective complaints were considerably improved, so that the patients were highly pleased with the results. Many requested a repetition of the irradiation as soon as the improvement seemed to subside. Two patients have been under the author's observation for more than four years. Some patients had been subjected to other treatments without satisfactory results, and they stated of their own accord that the temporary or prolonged improvement was the result of the irradiation. But the author admits that, as far as he is able to judge, the ankylopoietic process advances in spite of the treatment, the reduction in pain and the improvement in the general condition. Of course, it is impossible to estimate whether the anatomic changes in the skeleton are retarded by the roentgen treatment or not, but he thinks that his observations justify a trial with roentgenotherapy in suitable cases of ankylopoietic spondylarthritis. He recommends the following method of irradiation: The rays are applied to three or four fields along the spinal column and eventually to one or two fields on the right and left sacro-iliac synchondrosis. The fields are 10 by 12 or 10 by 15 cm. To each field 130 roentgens is applied five times. The irradiations are given from a distance of 30 cm., through a filter of 0.5 mm. of copper and 1 mm. of aluminum, and with 0.9 mm. of copper as the half layer value. The intensity is such that from 28 to 35 roentgens is applied each minute. The intervals between the irradiations of each field are from five to ten days. The joints react occasionally to from six to ten applications of 65 roentgens, applied under the same conditions. The series of treatments may be repeated after six months, but a definite rule is difficult and the result of the treatment and the severity of the condition should be taken into consideration.

**Treatment of Actinomycosis.**—After evaluating various methods of treatment, such as surgery, medication with iodine, injection of methylene blue and vaccination, Dyes expresses the opinion that the results obtained with roentgenotherapy are such that the treatment hardly requires further recommendation. From the standpoint of the roentgenologist, actinomycosis takes a special position among the inflammatory disturbances in that it requires much larger quantities of roentgen energy than do other inflammatory conditions. According to the dose of roentgen rays that was employed, the author reports three groups of cases. In the first group the entire unit skin dose was applied, either in one session or within six days. These patients recovered within from three to ten weeks. The second group includes the patients in whom from 40 to 60 per cent of the unit skin dose was given, either once or several times in several sessions with intervals of several weeks' duration. The fact that the irradiation had to be repeated indicates that the single dose was not sufficiently large. The patients belonging to the second group recovered in from nine to sixteen weeks, and relapses did not occur. In the third group of patients, the single dose did not reach 40 per cent of the unit skin dose, and in most cases 25 per cent was applied, either once or repeatedly after intervals of several weeks. The actinomycosis was cured in all ten cases that were treated in this manner, but in one case a relapse occurred six months later. The observations on these three groups of patients prove that the large dose accelerates the cure considerably.

**Hydrometra After Intra-Uterine Radium Irradiation.**—Vogt gave intra-uterine radium irradiations to a woman who had undergone an operation for bilateral ovarian carcinoma, and a hydrometra developed. The author considers this a rare occurrence, since it was the only case in which he observed it. The differential diagnosis of hydrometra may present great difficulties. If the uterus remains after the removal of both adnexa on account of carcinoma, the later enlargement of the uterus generally leads to the assumption of a myoma or of a relapse of the ovarian carcinoma. In the course of the operation for the removal of the uterus, after the development of the hydrometra, it was found that the postoperative irradiation with roentgen and radium rays, to which the woman had been subjected after the operation for ovarian carcinoma, had produced good results.

**Action of Intravenous Injection of Radon on Blood.**—Nemenow and Gurewitsch describe experiments on rabbits which reveal that the intravenous injection of radon effects a reduction of the number of leukocytes, especially the small lymphocytes. Histologic studies of the blood forming organs disclose that the changes observed correspond with those of the circulating blood. The lymph nodes and splenic follicles are most severely changed, but the bone marrow is likewise involved. The authors point out that their method of influencing the blood by the intravenous administration of radon is valuable in studies on the hematopoiesis but that the problem of the therapeutic application of radon by means of intravenous injection is still unsolved. They are convinced that the intravenous application of radon is of no value in the treatment of malignant tumors. However, they think that in leukemia, particularly the lymphatic form, the therapeutic prospects of the intravenous injection of radon are more promising, and they are now investigating this possibility.

## Wiener Archiv für innere Medizin, Vienna

**25:** 161-320 (Aug. 10) 1934

Metabolic Investigations in Disturbances of the Circulation. D. Laszlo. —p. 161.
Fate of Resorbed Fats in Organism. H. Schur, A. Löw and A. Krčma. —p. 197.
Action of Insulin on Provisional Storage of Resorbed Carbohydrates and Fats in Organism. H. Schur, A. Löw and A. Krčma.—p. 203.
Histopathology of Chronic Articular Rheumatism and Its Clinical Significance. E. Freund.—p. 211.
Rôle of Environmental Factors in Pathogenesis of Primary (Vascular) Hypertension. E. Baráth and A. von Mirgay.—p. 221.
*Bacteremia, Wassermann Reaction and Morphologic Blood Picture in Endocarditis Lenta. A. Wydrin.—p. 231.
*Tendinous Fibers and Cardiac Sounds. S. Bondi.—p. 245.
Rôle of Liver in Water Economy. D. Adlersberg.—p. 269.
Leukopenia Under Physiologic and Pathologic Conditions. U. Strasser. —p. 283.

**Bacteremia and Blood Picture in Endocarditis Lenta.**—Wydrin reaches the conclusion that Streptococcus viridans cannot be considered the specific organism of endocarditis, but he admits that it is the organism that is most frequently found in bacteriologic studies of endocarditis lenta. In all cases in which there are no indications of syphilis, great caution is necessary in the evaluation of a positive Wassermann reaction. A secondary anemia is one of the principal symptoms of endocarditis lenta, and in cases of severe septic manifestations and of reduced resistance it may appear in a severe form. Leukopenia with manifestations of neutrophilia and nuclear deviation to the left with the appearance of staff-nuclear and young forms and lymphopenia are indications of grave danger. Monocytosis with some or numerous endothelial cells and frequently with macrophages indicates an unfavorable prognosis, particularly in cases of progressive anemia and growing septic symptoms.

**Tendinous Fibers and Cardiac Sounds.**—Bondi considers the old theory that transverse tendinous fibers are responsible for the development of the musical heart sounds, valuable so far as it calls attention to the fact that tendinous fibers and not alone the valvular apparatus are involved in the formation of cardiac sounds. On the other hand, this theory has underestimated the significance of the tendinous fibers, for sounds may be formed by the transverse and under certain conditions by the longitudinal fibers. Moreover, the tendinous fibers play a part not only in the formation of the musical sounds but also in a portion of the rough, that is the ordinary, heart sounds. The direction, the volume and the velocity of the blood are important for the production of a sound phenomenon. In order to produce a sound, the onflow must be as much as possible in the vertical direction and the velocity must be more than 1 meter a second. These requirements must be fulfilled also in the case of musical sounds; but here tendinous fibers of an especial delicacy, with a diameter of approximately 0.01 cm., are required, and those delicate fibers seem to be present only underneath the fibers that are stretched longitudinally. In these cases a lesser velocity, up to about 60 cm. a second, may be sufficient to produce a musical sound. The occurrence of isolated musical sounds becomes understandable when it is considered that the velocity is not sufficient to produce rough sounds from the thicker tendinous threads or in the valvular canal. Other musical sounds may develop as the result of narrow and regular clefts in a valvular membrane or as the result of cut sounds.

case of Schoenlein-Henoch's purpura, they found that the daily treatment proved ineffective, but in two of these the period of



## Wiener klinische Wochenschrift, Vienna

**47:** 1057-1080 (Aug. 31) 1934. Partial Index

*Clinical Significance of Terminal Deflection in Electrocardiogram. D. Scherf.—p. 1057.
*Spinal Hemilateral Paralysis of Diaphragm. K. H. Bardenhofer.—p. 1067.
Attempt to Treat Puerperal Sepsis in Dog by Means of Insulin-Dextrose. W. Neumann.—p. 1069.
Ileus Following Eating of Dried Pears. P. Moritsch.—p. 1070.
Pathogenesis and Therapy of Hay Fever (Rhinopathia Pollinosa, Asthma Pollinosum). E. Urbach.—p. 1073.

**Terminal Deflection in Electrocardiogram.** — Scherf stresses the great independence of the shape of the terminal, the ST, deflection. This is partly due to the fact that the various external influences modify the T wave more readily and noticeably than they influence the QRS complex. In enumerating the factors that influence the ST deflection, the author mentions the condition of the cardiac muscle, the tonus of the cardiac nerves, the position of the heart (position of the diaphragm), the thickness and the moisture content of the skin, thoracic exudates, action of digitalis and cardiac hypertrophy. The author further discusses the various abnormalities of the ST deflection and their significance. He concludes that abnormalities of the T wave in leads I and II indicate a pathologic condition in the myocardium, but that it is wrong to base a prognosis as to life expectancy on such changes. In patients with coronary thrombosis, for instance, the abnormal T wave and all other clinical signs may vanish within a comparatively short time and the patient may feel well for many years after. The prognosis should take into consideration all other clinical symptoms as well as the electrocardiogram.

**Spinal Hemilateral Paralysis of Diaphragm.**—Bardenhofer points out that paralyses of the diaphragm that can be traced to an impairment of the spinal cord are found as a rule only in cases of extensive impairment of the cervical cord, such as the terminal stages of Landry's paralysis, systemic disorders of the anterior horn and syringomyelia. These spinal forms of diaphragmatic paralysis are as a rule bilateral, but the literature reports also unilateral cases. In all these cases, however, other spheres, whose nuclei are near the spinal origin of the phrenic nerve, were involved in the spinal paralysis. Cases in which a unilateral diaphragmatic paralysis of spinal origin is the only neurologic symptom have never been described before, and for this reason the author feels justified in reporting the history of a man, aged 51, in whom an isolated hemilateral diaphragmatic paralysis developed. It is assumed that this paralysis originated in a small myelitic focus.

## Zeitschrift für urologische Chirurgie, Berlin

**39:** 319-427 (July 21) 1934

Attempt at Transperitoneal Pyelotomy. A. Gridnev.—p. 319.
Significance of Pyelography for Differential Diagnosis of Abdominal Tumors. P. I. Felfer and M. I. Schor.—p. 322.
Radiologic Vesico-Ureteral Sign and Its Rôle in Estimation of Intravenous Urography. P. Constantinescu.—p. 334.
Primary Cancer of Renal Pelvis. G. S. Epstein.—p. 354.
*Simple Ulcer of Bladder. W. Pollak.—p. 362.
Incontinence of Female Bladder and Its Treatment. J. Frigyesi.—p. 369.
*Alkali Reserve of Blood Plasma in Surgical Diseases. E. Szold.—p. 389.
Surgical Treatment of Urinary Incontinence in Cases of Defective Formation of Urinary Organs. D. A. Wedenski, M. B. Levitanus, L. G. Milberg and E. A. Frakmann.—p. 394.

**Simple Ulcer of Bladder.**—Pollak points out that, among the many ulcerous processes of the bladder, one was definitely identified by Paschkis as a disease entity. This type is now generally known as simple ulcer. This form of simple ulcer of the bladder is of nonspecific origin, and tuberculosis, syphilis and carcinoma can thus be excluded. However, the genesis, the diagnosis, the pathologic anatomy and the therapy are still in dispute. The author describes two cases of simple ulcer of the bladder, one of which was under his observation for six years. A cystogenic pathogenesis seems to be certain in both patients. A neglected cystitis during the puberal age appears to have been the cause of the simple ulcer in the first woman, and in the second patient the ulcer began with a puerperal cystitis. It has been pointed out by some investigators that simple ulcer is a gynecologic disease occurring exclusively in sexually mature women. The two patients observed by the author stated that before the onset of menstruation the condition was exacerbated, while the condition was improved during and after menstruation. Moreover, pregnancy effected an improvement in both instances. To the knowledge of the bacteriology of simple ulcer the two cases contributed in that they revealed that the condition is not caused by a definite organism. Colon bacilli and staphylococci were found in one case, while unidentified gram-negative rods were detected in the other. Local disturbances in the blood supply may promote the development and the relapse of the ulcers. The diagnosis must be made by exclusion. After a specific genesis and carcinoma have been excluded, the condition must be differentiated from ulcerous cystitis and from incrusted ulcer. But loosely adhering incrustations occur also in simple ulcer. The usual treatment for cystitis is ineffective in simple ulcer of the bladder. The local application of methylene blue (from 0.25 to 0.5 per cent solutions) is the most satisfactory of the conservative remedies. Electrocoagulation, however, is the most effective method and proved superior even to the excision of the ulcer.

**Alkali Reserve of Blood Plasma in Surgical Diseases.**—Szold calls attention to a reduction of the alkali reserve of the blood of patients with renal disease. He studied the alkali reserve of the blood plasma of 100 patients in a urologic clinic and at the same time made the various functional tests of the kidney. He found that in urologic surgical disturbances the reduction in the alkali reserve runs parallel with the damage to the excretory organ and with the inhibition of the discharge. Moreover, there is a parallelism between the reduction in the alkali reserve of the blood serum, the lowering of its freezing point and its content in rest nitrogen and in xanthoprotein.

## Nederlandsch Tijdschrift voor Geneeskunde, Haarlem

**78:** 4417-4512 (Sept. 29) 1934

Functional and Organic Changes of Speech. L. Kaiser.—p. 4418.
Diverticula of Urinary Bladder. D. Van Cappellen.—p. 4425.
*Cirrhosis of Liver with Hemolytic Anemia and Severe Hematinemia. A. A. Hijmans Van Den Bergh and A. W. C. G. Kamerling.—p. 4432.
*Treatment of Addison's Disease with Sodium Chloride. J. F. Touw and W. F. Noordhoek Hegt.—p. 4439.
Recent Observations on Bacteriology of Hemoglobinophilic Bacteria. J. Mulder with the collaboration of Miss J. Ubbink.—p. 4447.
Artificially Produced Quartan Malaria. C. W. F. Winckel.—p. 4455.

**Cirrhosis of Liver with Hemolytic Anemia and Severe Hematinemia.** — Hijmans Van Den Bergh and Kamerling describe a patient presenting hepatic cirrhosis of the Laënnec type in whom a severe icterus and macrocytic anemia developed without any sign of hemorrhage. Such symptoms as the intensity of the icterus, the itching of the skin, the relatively slow pulse and the amount of coproporphyrin (hematin derivative) in the blood serum suggested an obstructive icterus. Other symptoms, however, suggested a hemolytic icterus: reticulocytosis, marked urobilinuria without bilirubin or bile salts in the urine, a marked amount of iron salts in the urine and of bilirubin in the blood serum (the latter mainly with a delayed reaction), strong excretion of urobilin in the stools, severe hematinemia and at necropsy a redness of the bone marrow. The authors advance several hypotheses as to the genesis of pernicious anemia: 1. In consequence of the disease of the liver, the hepatopoietic substances may be destroyed. 2. Resorption of these substances may be disturbed by the intestinal mucosa. 3. There may be a lack of the intrinsic factor of Castle, just as in cases of pernicious anemia.

**Sodium Chloride Treatment of Addison's Disease.**—Touw and Noordhoek Hegt review the literature on the influence of administration of sodium chloride on epinephrectomized animals and the favorable results of increased salt intake on Addison's disease. The authors observed the clinical manifestations and blood chemistry of two patients suffering from Addison's disease during periods of normal, salt-free and excessive salt diets. There was a noteworthy parallelism between clinical improvement of the patients and the rise of the sodium content of the blood after oral administration of large quantities of sodium chloride (from 20 to 35 Gm. daily).